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ABSTRACT

This document presents findings and recommendations of a resource group charged with providing background information and recommendations concerning program planning in colleges and universities for the development of a master plan for higher education in Connecticut. Recommendations of the resource group include: (1) that the Commission for Higher Education be directed and authorized to plan and implement a statewide system for the coordination of postsecondary educational programs in Connecticut; (2) that public and private postsecondary institutions be required to comply with the policies and procedures of a statewide process of program review if they wish to share in public funds for programs for which public funds are sought and offered; (3) that separate advisory bodies be established in such general career fields as business, technology, and industry; teacher education, criminal administration and social services, health professions, and environmental studies; and (4) that increased efforts be made by both the Commission for Higher Education and individual institutions to develop and maintain closer, deeper, and more formal relationships between education and the other elements of society. (Author/HS)

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PROGRAMS

DISTRIBUTION, REVISION, AND TERMINATION

The Report of

RESOURCE GROUP IV

A Discussion Paper for the

MASTER PLAN FOR
HIGHER EDUCATION IN CONNECTICUT

U.S. DEPARTMENT OF HEALTH
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Document #12
February 1973

HE 00 3917

Note: This report is the work of the Resource Group; the reader is reminded that the recommendations made in this report are not necessarily opinions or positions of the Commission for Higher Education or any other group.

STATE OF CONNECTICUT

COMMISSION FOR HIGHER EDUCATION

P.O. BOX 1320 - HARTFORD, CONNECTICUT 06101

AREA CODE 203 566-3913

February, 1973

To the Reader:

The 1972 General Assembly passed Public Act 194 which directed the Commission for Higher Education to develop a Master Plan for Higher Education in Connecticut by January 1974. In response, the Commission determined a structure designed to insure broadly based participation in the development of the plan. An overview of that structure is contained in the following document.

One of the most important elements of the Master Plan structure is the Resource Groups. Since September 1972, these groups, made up of over two hundred persons, have addressed themselves to major topics for the Master Plan. The reports of these groups have been made available to public boards of higher education with the request that the reports be disseminated to the chief executives and to the chief librarians of each institution and that the broadest discussion possible of the resource groups' topics be encouraged among faculty, students and interested groups. In addition, copies are being made available through public libraries and to organizations and governmental agencies which might be interested. Because the supply of the reports is limited, any interested individuals are permitted to reproduce any or all reports.

This report is one of eight Resource Group Reports. It should be recognized that the topics assigned to the Resource Groups are not mutually exclusive. Therefore, the reader is encouraged to read all eight reports.

The Commission for Higher Education is most grateful to the many individuals who gave freely of their time and energies serving on Resource Groups. The excellent groundwork they have provided in their reports will facilitate the deliberations of additional groups and individuals as the process of the Master Plan development continues.

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INTRODUCTION

The following report has been prepared by the Resource Group for consideration by the Commission for Higher Education as it develops a Master Plan for higher education in Connecticut. To insure clear understanding of this report a number of points should be emphasized:

- The findings and recommendations are the considered judgment of the individual Resource Group. They do not necessarily represent an opinion or position of the Commission for Higher Education or any other group such as the Management/Policy or Review and Evaluation Group.

- This report is one of eight reports. The Resource Group reports, as a whole, are position papers for consideration in the development of the Master Plan. They should not be construed as constituting a first draft of the Master Plan. Subsequent to further discussion and comment, the recommendations made in reports may be retained, revised, or deleted in the Master Plan.

- The recommendations of the group may conflict with recommendations made by other groups. The reconciliation of conflicting recommendations will be considered in the process of developing a draft Master Plan.

- The development of a Master Plan is a dynamic process requiring continuing input from many sources. Although the Resource Group reports provide an important source of judgments about the elements of the plan, additional reaction, comment, and thought is required before an initial draft of the Master Plan can be completed.

All questions and comments concerning this report should be addressed to Master Plan Staff Associates, c/o The Commission for Higher Education, P.O. Box 1320, Hartford, Connecticut 06101.

PROCESS OF THE MASTER PLAN

Groups Involved in the Master Plan

I. Commission for Higher Education: The State's coordinating agency for higher education was requested by the General Assembly (P.A. 194, 1972) to develop, in cooperation with the boards of trustees of the constituent units of the public system, a Master Plan for Higher Education in Connecticut. The plan is to be completed and submitted to the General Assembly by January, 1974.

II. Management/Policy Group: A steering committee for the Master Plan process; membership consists of the chairmen of the boards of trustees for the constituent units, and the president of the Connecticut Conference of Independent Colleges. Liaison representation from the Governor's office and from the General Assembly are also represented.

III. Resource Groups: These groups are charged with developing position papers on specific topics for utilization in the development of a Master Plan. Membership is proportionately balanced between the higher education community and non-academics to insure that a broad spectrum of viewpoints be represented in group deliberations. Each group was assigned specific questions by the Management/Policy Group. In addition, each group was encouraged to address any other questions as it saw fit.

IV. Review and Evaluation Group: A group invited to review, evaluate, and make comments on the Resource Group reports and successive drafts of the Master Plan. Ten members represent a wide spectrum of the state's business and public interest activity and three ex-officio members are from state government.

V. Master Plan Staff Associates: Each of the constituent units of the public system and the Connecticut Conference of Independent Colleges have provided staff support for the Master Plan project. The staff associates serve a dual function: (1) each staff associate provided staff assistance to a Resource Group and, subsequently, (2) the staff associates will, in collaboration with the Commission staff, prepare the draft of the Master Plan.

VI. Constituent Unit Boards of Trustees, including Faculty, Students and Administration: All boards of trustees of the higher education system are asked to review carefully the Resource Group reports and the Master Plan drafts to follow. It is expected that each institution will encourage the fullest possible discussion among faculty, students, and administrators.

VII. The Public: In addition to the higher education constituencies noted above, a vital input to the Master Plan is the participation of all who are interested, including: individuals in industry, labor, minorities, professionals -- in short, all organizations and individuals interested in higher education. Comments are invited at any stage of the development of the Master Plan. However, for consideration for the initial draft of the Master Plan, comments must be received by April 1973 and in the final draft of the Master Plan by September 1973.

AN OUTLINE OF ACITVITIES FOR THE DEVELOPMENT OF THE MASTER PLAN

Activity

1. CHE requests staff assistance from constituent units — 6/72
2. CHE appoints Management/Policy Group
3. Management/Policy Group:
   a. Identifies elements of Master Plan
   b. Develops queries to be addressed
   c. Appoints Resource Groups
4. CHE holds Colloquium Orientation meeting
5. CHE appoint Review and Evaluation Group
6. CHE approves interim report for transmittal to Governor — 12/72
7. Resource Groups complete and transmit papers to Management/ Policy Group
8. Mangement/Policy Group distributes Resource Group reports to Constituent units, Review and Evaluation Group, and other interested groups and individuals
9. Comments on Resource Group reports are submitted by Review and Evaluation Group, constituent units, and other interested individuals and groups
10. Initial Draft of Master Plan is prepared and distributed to constituent units and Review and Evaluation Group
11. Initial reactions are received and Draft of Master Plan is amended
12. CHE sponsors public presentation of amended Draft of Master Plan and solicits comments from all groups and individuals who are interested
13. Comments reviewed and evaluated and final draft prepared
14. Management/Policy Group receives final comments on final Draft of Master Plan from constituent units and Review and Evaluation Group, reports to CHE
15. CHE approves final draft of Master Plan and transmits it to the Governor and General Assembly — 12/73

A REPORT

to

THE CONNECTICUT COMMISSION FOR HIGHER EDUCATION

by

THE RESOURCE GROUP IV (PROGRAMS)

for

THE MASTER PLAN

Harold W. See
Benton Professor of International and Higher Education
University of Bridgeport
Chairman

Commission for Higher Education
P. O. Box 1320
Hartford, Connecticut 06101

February, 1973

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UNIVERSITY OF BRIDGEPORT

BRIDGEPORT, CONNECTICUT 06602

February 2, 1973

Mr. Donald H. McGannon,
Chairman
Commission for Higher Education
P.O. Box 1320
Hartford, Connecticut 06101

Dear Mr. McGannon:

Attached please find a copy of the final report prepared by Resource Group IV (Programs), one of eight resource groups responsible for in-put to the Connecticut Commission for Higher Education Master Plan.

Resource Group IV, appointed in October of 1972, was assigned the task of formulating a body of recommendations on program needs and the processes necessary to achievement of program coordination.

The magnitude of the task and the restraints imposed by the date set for completion of the report made it desirable for Resource Group IV to work in three sub-committees: Process, Level and Types of Programs, and Long Range Planning. In addition to the twenty-five members of Resource Group IV, over one hundred additional persons either participated on these sub-committees or contributed information for the report.

Interviews, open hearings, formal questionnaires, consultation with professional and public service organizations, and review of related literature were among the methodologies used in data gathering and in the preparation of our responses to the specific questions submitted by the Management/Policy Committee, and in the formulation of the nine specific recommendations resulting from our deliberations.

The members of Resource Group IV spent many hours in the preparation of this report, and regret that they didn't have more time for study of issues so critical to state-wide master planning of post secondary education. The content of this report is not viewed as a panacea for post secondary educational program coordination. However, we believe our nine recommendations provide an excellent starting point for systematic program coordination. From an operational standpoint,

the recommended processes should provide a framework for greater cooperation and more effective utilization of resources by and between the 138 post secondary institutions in Connecticut.

Resource Group IV stands ready to be of any further assistance desired.

Respectfully submitted,

Harold W. See
Benton Professor of
International and Higher Education

HWS:rh

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SPECIAL CONSULTANTS

During the efforts of Resource Group IV (Programs) to complete its assignments, the following persons accepted invitations of Sub-Committee Chairmen to meet with their committees and to provide direct in-put to the reports. Their contributions, which are greatly appreciated, were of such significance that they are designated as "Special Consultants."

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In addition, many persons aided Resource Group IV in a variety of ways. They are listed as Adjunct Participants immediately following those parts of this report to which they contributed most directly.

ACKNOWLEDGEMENTS

The membership of Resource Group IV (Programs), the special consultants, the adjunct participants, and the leadership of professional associations all contributed unselfishly of their time and knowledge to the task of preparing the report on Programs. Without such dedication, it would have been impossible to have met the stringent deadline established.

Special thanks should be given to Dr. Joseph R. Dunn, Jr., who acted as the Staff Associate from the Commission for Higher Education to Resource Group IV. His knowledge of higher education, his objectivity in approach to the rather complex problems confronted by this group, and his efforts throughout were on the highest professional level.

Finally, Mrs. Agnes B. Osterlag, a highly skilled secretary at Central Connecticut State College, who worked many hours making it possible to have staff work completed before each meeting, deserves high commendation.

Resource Group IV (Programs)

Excerpts from

PRINCIPAL

FINDINGS AND RECOMMENDATIONS

FINDINGS:

I. Inclusion of the proprietary schools and hospital schools with the institutions of higher education in a statewide system for the coordination of post-secondary educational programs under the aegis of the Commission for Higher Education is in the best interests of the citizens of Connecticut.

Presently, there are 138 post-secondary institutions in Connecticut available to serve the approximately 150,000 persons desiring such educational opportunities each year. For purposes of program coordination, some of these institutions possess sufficient similarities of level and type to be grouped into the seven "units" as follows: Proprietary Schools - 62; Hospital Schools - 32; Technical Colleges - 4; Community Colleges - 12; State Colleges - 4; State University - 1; Private Colleges and Universities - 23; for a total of 138.

Collectively, these institutions now possess the diversity necessary to meet the educational needs of Connecticut's citizens. The role of the Commission for Higher Education as both a catalytic agent and a clearinghouse would be to draw the best from this diverse group of established institutions into a system for the coordination of programs and to aid the development of a whole series of flexible relationships within education and with the larger community which do balance public interest with institutional autonomy. (See Section Two - Answers A, D, E, F, G, I, J, K, L; and Section Three)

II. The process of actively involving over two hundred persons from a wide variety of backgrounds in the Master Plan effort is highly commendable and one that should be continued in some form. Effective program planning must be based on a continuing, much stronger effort to involve the broader interested community through general and special advisory committees, special studies, resource groups, and the like. Liaison should be actively cultivated in terms of geographic area, particular career fields, using employers, professional groups, etc. Only in this way can we hope to achieve reasonable relevance in this era of rapidly increasing change. This approach is

FINDINGS (continued):

needed in the interest of educational institutions, the students, the concerned business and government institutions, and the society as a whole. We are not doing nearly as well in this area as we need to. Hopefully, the relatively broad participation in this Master Planning effort will help us to make a start towards substantial improvement. (See Section Two - Answers D, I; and Section Three)

III. Many educational institutions have found value in advisory groups of informed and interested lay people. Initially, these advisory groups were helpful in broadening the college experience and in fund raising. Recently, dedicated groups have demonstrated their value to the college by relating the needs of the public to the college, sometimes on a program-by-program basis. In some instances, the college needed assurance of the acceptance and value of a contemplated program. In other cases, the lay advisors recognized a fault or void in the educational program, and provided signficant and constructive assistance in the initiation of a new program.

The development of such formal relationships would encourage and expedite the introduction of program ideas to the Commission for Higher Education by a variety of institutions, agencies, groups, or individuals outside the educational establishment and arrange for the careful consideration of such ideas as programs for review and possible "plug-in" to the system for the coordination of post-secondary educational programs. The much sought after balance between the needs of society and the needs of individual students would be much closer to reality. (See Section Two - Answers D and I)

IV. Programs are defined as those organized educational activities which lead to some terminal objective, be it a certificate, diploma, or degree. Representatives from both the public and private sectors expressed dissatisfaction with the present method of program approval since there is no effective means through which to avoid unnecessary duplication of programs, and no rational link among the various levels and types of programs.

The most effective process of program review is one that considers not only the approval of new programs, but also the deletion, merger, revision, and shelving of existing programs; contains no unnecessary and cumbersome procedures; and expedites program change. It is a process which involves all public and private post-secondary institutions, utilizes common guidelines and procedures, and allows individual institutions to contribute significantly to the statewide system for the coordination of post-secondary educational programs.

FINDINGS (continued)

More complete institutional compliance with the statewide process of program review would overcome some of the shortcomings of the present method of program approval and benefit both the individual institutions and the state's efforts to meet the post-secondary educational needs of its citizens.

In recommending required compliance under appropriate circumstances, Resource Group IV (Programs) is aware of the intricate, historic, legal and educational issues involved in the relationships between public and private education, and, therefore, found that it would be advisable for the Commission for Higher Education to complete a study forthwith on the feasibility of such required compliance. (See Section Two - Answers A, B, C, D, E, F, J, and K)

V. Many levels and types of institutions do not feel adequately represented in the present method of program approval and wish to contribute directly to the proposed statewide system for the coordination of post-secondary educational programs. Such contributions could best be made through the newly constituted Academic Planning committee which with operating funds and with direct in-put from all seven "units," could develop appropriate guidelines, hold open and regularly scheduled meetings, publish a newsletter, and hold hearings and/or appeals on program changes. A balance between centralized authority and institutional autonomy could be maintained in regard to program development and change by leaving to the individual institutions all decisions about courses and the academic content of any programs. (See Section Two - Answers F, J; and Section Three)

VI. Individual institutions have been attempting to meet the changing career needs of their students through the introduction of new programs. They have been hampered by the lack of accurate manpower demands information, insufficient relationships with practitioners, and only limited information about the efforts of other institutions. As a result, many program imbalances have occurred in the state.

While it would be philosophically inconsistent with democratic principles to establish program quotas in the name of manpower planning since it is not a function of education to guarantee a job anyway, these separate advisory bodies, in cooperation with the Academic Planning Committee of the Commission for Higher Education, could avoid significant program imbalances by providing to the students and institutions guidance and information on long-range employment opportunities, career programs in other institutions, and by aiding the correlation of formal educational experiences more closely with the world of work.

FINDINGS (continued):

On the other hand, liberal arts programs based upon a very intimate knowledge of the more personal interests and needs of students and serving as the general undergirding for specific career programs, should be left primarily to the individual institutions for their development. Even in these fields, the efforts of the Academic Planning Committee in reviewing such programs would contribute to the value of the statewide system for the coordination of post-secondary educational programs. (See Section Two - Answers C, D, E, K, L, M; and Section Three)

VII. While some institutions have already established "long-range planning committees," it is necessary that all post-secondary institutions be looking at least five to ten years ahead of their present supply/demand program balance, so that they will have a better chance to have ready the type, quality, and quantity of graduates which society will want and need in this relatively near-term future.

Leadership is needed to coordinate these efforts and to support the conclusion that it is not enough for post-secondary education to be in a position by 1979 to provide for a particular number of business students, or engineers, or social scientists. It must assure that all possible thought be given to what each career field is apt to be like in the year 2000, and to what changes are required in the program thrust and curriculum to provide the soundest basis for the productive careers of the students being taught right now.

There are a number of particular program changes which can be suggested based on study of future economic, social, and technological trends. More fundamentally, it may be that research is needed on the structure of knowledge and learning in order to facilitate inter-disciplinary work in dynamic complex systems, deal meaningfully with the accelerating information explosion, and help increase the efficiency of learning on a life-time basis. It is also felt that much more attention must be given to programs of continuing education, since the accelerating pace of change means that most people will require increasingly frequent updating and retreading of their educational background. (See Section Two - Answers B, C, D, F, L; and Section Three)

VIII. Master planning as a means of balancing the needs of people with the resources of the state to provide for those needs must never ignore the human element in its efforts to coordinate activities or to develop more efficient statewide utilization of resources.

FINDINGS (continued):

This admonition is extremely important in the development of master plans for the process of program review, for the development of programs at the several levels and types of institutions, and for consideration of the relevant future of educational programs in Connecticut. Inertia in the change process often displayed by individuals and groups of individuals, is based, primarily, upon a sincere concern for the changes that might occur in the personal and professional status of persons involved in the programs as they presently exist.

Wide participation in the planning process, availability of accurate data about present and future program needs, decrease in professional positions through attrition rather than direct elimination, provision for the personal program interests of students, and opportunities for retraining or reassignment of professional personnel are all ways through which a concern for the human element can be implemented. (See Section Two - Answers F, G, I, and Section Three)

IX. This report does not wish to further the concept that the only means of providing improved educational opportunities for the citizens of Connecticut is by the mere allocation of more funds. However, it is felt adequate funds for the operation of the various committees and advisory bodies are essential to the successful completion of their responsibilities.

The establishment of the recommended statewide system for the coordination of post-secondary educational programs should result in some financial economics through the more effective use of all existing educational resources, through more utilization of innovative instructional techniques, and through more widespread employment of alternate approaches to education. Further funds might be saved by curtailing the building of new physical facilities except where detailed justification is present. In so doing, additional funds would then be available for program development through the various committees and advisory bodies, and for student and faculty assistance where appropriate. (See Section Two - Answers C, D, E, F, G, I, M, O; and Section Three)

Note: Section I of the final report of Resource Group IV (Programs) contains a full discussion of the salient findings associated with each recommendation. In addition, the sources provided in the parentheses refer to other parts of this final report in which further discussion of these topics can be found. Copies of this final report are available in the office of the Commission for Higher Education, Hartford, Connecticut.

RECOMMENDATIONS:

I. That the Commission for Higher Education be directed and authorized to plan and implement a statewide system for the coordination of post-secondary educational programs in Connecticut. (See Section Two - Answers C, D, E, F, G, I, K, L; and Section Three)

II. That the process of educational planning initiated in this Master Plan effort be continued by the Commission for Higher Education as part of its on-going, standard operating procedures. (See Section Two - Answers D, I; and Section Three)

III. That increased efforts be made by both the Commission for Higher Education and individual institutions to develop and maintain closer, deeper, and more formal relationships between "education" and the other elements of society. (See Section Two - Answers D and I)

IV. That public and private post-secondary institutions be required to comply with the policies and procedures of a statewide process of program review if they wish to share in public funds for programs for which public funds are sought or offered. Such funds would not include individual student scholarships. (See Section Two - Answers A, B, C, D, E, F, J, and K)

V. That the present Sub-Committee on Coordination and Planning be replaced by a permanent Academic Planning Committee under the aegis of the Commission for Higher Education with advise and consent authority over the review of programs, and that this new committee be representative of all seven "units," faculty, students and general public. (See Section Two - Answers F, J; and Section Three)

VI. That separate advisory bodies be established in such general career fields as business, technology, and industry; teacher education; criminal administration and social services; health professions; and environmental studies; to work directly with the proposed Academic Planning Committee of the Commission for Higher Education in the coordination of educational programs in these fields. (See Section Two - Answers C, D, E, K, L, M; and Section Three)

VII. That the Commission for Higher Education provide leadership in introducing the aspect of futures research and the methodology of futures-oriented planning and policy making into the development of educational programs in Connecticut. (See Section Two - Answers B, C, D, F, L, and Section Three)

RECOMMENDATIONS:

VIII. That the implementation of the various recommendations contained within this report be based upon due consideration of their effects on the lives of people since education is an enterprise concerned primarily with people and not with products. (See Section Two - Answers F, G, L; and Section Three)

IX. That adequate funding be provided to implement the recommendations offered in this report and that procedures for the public accountability of such funds be developed to assure their efficient and effective use. (See Section Two - Answers C, D, E, F, G, I, M, O; and Section Three)

CONNECTICUT COMMISSION FOR HIGHER EDUCATION

MASTER PLAN

RESOURCE GROUP IV (PROGRAMS)

FINAL REPORT

Introduction

Resource Group IV (Programs), as one of eight resource groups responsible for in-put to the Connecticut Commission for Higher Education Master Plan, addressed itself specifically to those organized educational activities which lead to some terminal objective, be it a certificate, diploma, or degree. Such educational activities, herein defined as programs, were examined and analyzed according to their levels and types in relation to a process for their addition, deletion, merger, revision, and temporary shelving, and with regard for the impact of rapidly changing future social, economic, and technological conditions on them.

Sections One and Two represent a synthesis of information and conclusions supplied by each of three separate sub-committees organized to study programs from different primary perspectives. The attached chart lists the primary purpose and membership of each sub-committee. On the other hand, Section Three contains excerpts from each of the three sub-committee reports to provide separate discussions of additional areas of concern, not necessarily covered in either the summary of salient findings and recommendations or in the answers to the specific questions. Copies of the complete reports submitted by the sub-committees are on file in the office of the Connecticut Commission for Higher

Education, Hartford, Connecticut.

It is felt that the future social and economic well-being of Connecticut is particularly dependent upon the availability, quality, and appropriateness of its post-secondary educational programs and the extent to which these programs contribute to the fulfillment of the traditional goal of education - to prepare citizens for life and work. The state of Connecticut has a significant opportunity to utilize "programs" as a means of drawing the best from a diverse group of 138 established post-secondary institutions and to develop a whole series of flexible relationships within this group and with the larger community which will make this goal fulfillment possible for an ever-increasing segment of Connecticut's population.

The procurement of in-put from individual institutions and the development of such relationships among them and with the larger community depend upon the ability of all those involved to define in an action sense, the three C's - Coordination, Collaboration, and Cooperation - as related to some central base of responsibility. This is a relevant challenge not easily met, since programs, their process of review, and the impact of future changes on them are among the most sensitive and vital aspects of statewide educational planning as they touch the very heart of what individual institutions are actually doing in terms of educating students.

Perhaps an effective process of program review, related directly to levels and types of institutions and to the changing educational needs of individuals and society might be one means of meeting this challenge.

Certainly, such a process on a statewide basis would attempt to reconcile the public interest with the appropriate degree of institutional autonomy which

will encourage and permit the establishment of the diversified, flexible, accessible, and open system for the coordination of post-secondary educational programs so desirable at this time in Connecticut's history.

RESOURCE GROUP IV - PROGRAMS

SUB-COMMITTEE ASSIGNMENTS

Sub-Committee on Process

Purpose: To examine procedures for the effective addition, deletion, merger, revision, and temporary shelving of programs.

Co-Chairmen: Edward Liston - Shelley Namer

Members: Sister Helen Bonin
Kay Bergin
Robert Lorish
Marie White

Sub-Committee on Levels and Types of Programs

Purpose: To examine current program offerings and to determine specific program needs now and in the future.

Co-Chairmen: Stanley Katz and Chandler Howard

Members: Frederick Adams
Claire Berg
Robert J. Brunell
Thomas Connors
Rabbi Jerome Malino
Peter McFadden
Barbara Schutt
Howard Zettler

Special Consultants: Larrie Dean
Robert Simpson
Thomas Smith

Sub-Committee on Long Range Program Planning

Purpose: To provide a futuristic orientation to the development of recommendations for process and programs.

Chairman: William Wallace

Members: Nancy Felt
Eloise Harris
Nathan Lerner
Ralph Lighfoot
Walter Marcus

Special Consultants: Jere Clark
Larrie Dean

Member-at-large: Joseph Murphy

Section One

Summary of Salient Findings and Recommendations

I. Coordination of Post-Secondary Educational Programs

Inclusion of the proprietary schools and hospital schools with the institutions of higher education in a statewide system for the coordination of post-secondary educational programs under the aegis of the Commission for Higher Education is in the best interests of the citizens of Connecticut.

Presently, there are 138 post-secondary institutions in Connecticut available to serve the approximately 150,000 persons desiring such educational opportunities each year. For purposes of program coordination, some of these institutions possess sufficient similarities of level and type to be grouped into the seven "units" as follows: Proprietary Schools - 62; Hospital Schools - 32; Technical Colleges - 4; Community Colleges - 12; State Colleges - 4; State University - 1; Private Colleges and Universities - 23; for a total of 138.

Collectively, these institutions now possess the diversity necessary to meet the educational needs of Connecticut's citizens. The role of the Commission for Higher Education as both a catalytic agent and a clearinghouse would be to draw the best from this diverse group of established institutions into a system for the coordination of programs and to aid the development of a whole series of flexible relationships within education and with the larger community which do balance public interest with institutional autonomy.

Diversity does exist among these many separate public and private institutions, as reflected in the wide range of sizes, objectives, and capabilities. What

is needed is a commensurate amount of coordination of effort among them. In fact, most of these institutions apparently consider and feel themselves competitive with each other with respect to both students and resources.

The Commission for Higher Education should encourage the channeling of this competitive urge into a strong individual institutional desire to make its unique contributions to a high-quality, flexible, accessible, and open system of post-secondary education through which the greatest number of Connecticut's citizens can be served.

The current relative autonomy of educational institutions tend to confine the program content to the interests and abilities of the instructional staff and the space and facilities available. Educational institutions may help to overcome these program limitations by being more attuned and responsive to society's requirements and by developing a more explicit consciousness of their special roles as parts of a larger system. With careful attention to external developments, the Commission for Higher Education should plan and implement a statewide system for the coordination of post-secondary educational programs which provides for community/constituency interaction on a continuing basis.

Recommendation I - That the Commission for Higher Education be directed and authorized to plan and implement a statewide system for the coordination of post-secondary educational programs in Connecticut.

II. Continuation of Master Plan Effort

It is felt that the process of educational planning is considerably more important than the plans themselves, for as circumstances may change the value of any

particular plans, the process continues to be an effective and relatively stable means to the development of new plans.

The process of actively involving over two hundred persons from a wide variety of backgrounds in the Master Plan effort is highly commendable and one that should be continued and expanded in some form. Effective program planning must be based on a continuing, much stronger effort to involve the broader interested community through general and special advisory committees, special studies, resource groups, and the like. Liaison should be actively cultivated in terms of geographic area, particular career fields, using employers, professional groups, etc. Only in this way, can we hope to achieve reasonable relevance in this era of rapidly increasing change. Programs and courses involving cooperative work and study experience in working institutions of the society (government, business, non-profit) related directly to programs of study should be encouraged and developed.

Consideration might be given to using a "loaned" executive approach to accelerate the planning effort, and to take advantage of the planning experience of major business firms. Far more attention and resources should be committed to change management and the planning of post-secondary education in the State as a whole, and within each individual institution.

This planning should be seen as a continuous process (planning) rather than a product (the plan), and should be based on a serious effort to project and consider the relevant future, or we will continuously be aiming behind the moving target. Further, it must be broadly participative and indicative, rather than precise, authoritative, and controlling in detail. The system for the coordination of post-secondary educational programs and its interfaces are far too complex, and

circumstances are changing far too rapidly to think of authoritarian, detailed central planning, rationalization, and control as an appropriate approach. There must be a large measure of institutional autonomy and initiative combined with a shared view of the big picture and a coordinated approach to important program decisions.

The members of Resource Group IV were particularly unanimous in their strongly held view that the system for the coordination of post-secondary educational programs must be in continuous, close and effective communication and interaction at all levels with the rest of the society. The broadest possible participation should be sought in program planning and development, in guidance, and in cooperative work and study programs of all kinds. Each career-oriented department or field in each institution should work hard at developing and maintaining liaison and interaction with career-related people and institutions. This approach is needed in the interest of the educational institutions, the students, the concerned business and government institutions, and the society as a whole. We are not doing nearly as well in this area as we need to. Hopefully, the relatively broad participation in this Master Planning effort will help us to make a start towards substantial improvement.

Recommendation II - That the process of educational planning initiated in this Master Plan effort be continued by the Commission for Higher Education as part of its on-going, standard operating procedures.

III. Relationships Between "Education" and Other Elements of Society

Just as those persons involved in the Master Plan effort have gained insight into the problems of planning educational programs and have contributed to their

possible solution, so too can other members of society help define the real meaning of "relevance" and aid the development of relevant educational programs.

Many educational institutions have found value in advisory groups of informed and interested lay people. Initially, these advisory groups were helpful in broadening the college experience and in fund raising. Recently, dedicated groups have demonstrated their value to the college by relating the needs of the public to the college, sometimes on a program-by-program basis. In some instances, the college needed assurance of the acceptance and value of a contemplated program. In other cases, the lay advisors recognized a fault or void in the educational program, and provided significant and constructive assistance in the initiation of a new program.

On the basis of individual institutional experiences, the Commission for Higher Education should encourage the development of advisory groups for each institution and even for each major career field to reflect the needs for its constituency. In addition to participating in program development, these advisory groups may be of assistance in matters of fiscal responsibility. With limited funds available, judgment, external to the college administration, may be helpful in allocating capital and operating budgets.

Of special significance is the correlation of the educational institution with the industries or other institutions which will employ the graduated student. Very successful work-study programs have been developed wherein the employed student works on academically related jobs. Regular academic credit is awarded when the required ability is demonstrated. Classroom requirements may be satisfied on the campus or at his place of business by traveling professors, authorized instructors from the employer's staff, or by closed circuit television.

The Commission for Higher Education can be especially helpful to the statewide system for the coordination of post-secondary educational programs by distributing detailed information about such individual cooperative programs and by serving as a liaison agency between educational institutions and potential employers wishing to initiate similar or innovative work-study programs.

A most important advantage of this closer interaction with the ultimate employer lies in the improvement which could arise in the vital area of student guidance. With the increasingly rapid changes in every career field, an understanding of the developing needs can best be achieved by particularly knowledgeable and thoughtful practitioners in each field. Access to these people at various stages of the educational process would be unusually helpful to students in forming their own educational and career goals, and understanding better the relevance of curriculum subject matter to their eventual career interest. This kind of guidance on a continuing basis could considerably improve the actual fit and the comprehension of the fit between the academic program and the eventual career interests of the students.

The interrelationships between educational institutions and other agencies of society can be mutually beneficial. For example, many professional and recreational organizations have seen fit to develop their own educational programs. Such programs could be more valuable with some in-put provided by professional educators to assure appropriate course content, organization of material, and development of training aids.

The development of such formal relationships would encourage and expedite the introduction of program ideas to the Commission for Higher Education by a variety of institutions, agencies, groups, or individuals outside the educational establishment

and arrange for the careful consideration of such ideas as programs for review and possible "plug-in" to the system for the coordination of post-secondary educational programs. The much sought after balance between the needs of society and the needs of individual students would be much closer to reality.

Recommendation III - That increased efforts be made by both the Commission for Higher Education and individual institutions to develop and maintain closer, deeper, and more formal relationships between "education" and the other elements of society.

IV. Required Compliance With Statewide Process of Program Review

Programs are defined as those organized educational activities which lead to some terminal objective, be it a certificate, diploma, or degree. Representatives from both the public and private sectors expressed dissatisfaction with the present method of program approval since there is no effective means through which to avoid unnecessary duplication of programs, and no rational link among the various levels and types of programs.

There is presently no adequate means of effectively coordinating the post-secondary educational programs in the state of Connecticut because there has not been developed an effective process for the addition, deletion, merger, and temporary shelving of such programs. This process should include criteria for the consideration of the personal and professional needs of students and faculty, the needs of the State, the State's ability to finance, compatibility with the basic role and scope of the institution, and the institution's readiness to implement a quality program.

Such a process should be open and include a complete sharing of information among institutions, and establish standards of program quality control that apply

equally and objectively to all institutions. Further, the process should be directed toward the development of a statewide system for the coordination of post-secondary educational programs which provides for accessibility, diversity, and flexibility, and permits smooth movement of students among the various levels and types of institutions.

The most effective process of program review is one that considers not only the approval of new programs, but also the deletion, merger, revision, and shelving of existing programs; contains no unnecessary and cumbersome procedures; and expedites program change. It is a process which involves all public and private post-secondary institutions, utilizes common guidelines and procedures, and allows individual institutions to contribute significantly to the statewide system for the coordination of post-secondary educational programs.

More complete institutional compliance with the statewide process of program review would overcome some of the shortcomings of the present method of program approval and benefit both the individual institutions and the State's efforts to meet the post-secondary educational needs of its citizens.

In recommending required compliance under appropriate circumstances, Resource Group IV (Programs) is aware of the intricate, historic, legal and educational issues involved in the relationships between public and private education, and, therefore, found that it would be advisable for the Commission for Higher Education to complete a study forthwith on the feasibility of such required compliance.

Recommendation IV - That public and private post-secondary institutions be required to comply with the policies and procedures

Recommendation IV (Continued) - of a statewide process of program review if they wish to share in public funds for programs for which public funds are sought or offered. Such funds would not include individual student scholarships.

V. Establishment of Academic Planning Committee

Many levels and types of institutions do not feel adequately represented in the present method of program approval and wish to contribute directly to the proposed statewide system for the coordination of post-secondary educational programs. Such contributions could best be made through the newly constituted Academic Planning Committee which with operating funds and with direct in-put from all seven "units," could develop appropriate guidelines, hold open and regularly scheduled meetings, publish a newsletter, and hold hearings and/or appeals on program changes. A balance between centralized authority and institutional autonomy could be maintained in regard to program development and change by leaving to the individual institutions all decisions about courses and the academic content of any programs.

In implementing the process of program review, the Academic Planning Committee should attempt the following:

A. Maintain institutional autonomy in regard to individual courses and the academic content of the program.

B. Make every effort to involve large numbers of teaching faculty members in the development of a statewide system of program coordination.

C. Provide assurance to faculty that jobs will not be in jeopardy if established programs are eliminated, merged, significantly revised, or shelved. Such needed, strong assurance could be provided by the

opportunity for reassignment at their own institution or at another institution or through a one-year, paid, leave-of-absence to retrain for a new and needed educational role.

D. Utilize common guideline forms for proposed program changes for all levels and types of institutions and develop separate and appropriate forms for the addition, deletion, merger, revision, and shelving of programs.

E. Strive for a balance between the needs of society and the needs of students when developing criteria for program review. Every effort to measure the impact of the decision on students, faculty, general public, the institution itself, other institutions, and the economy should be made.

F. Encourage the general public and non-educator groups to submit programs for review and possible "plug-in" to the system for the coordination of post-secondary educational programs.

G. Provide direct incentives such as funds, job security, philosophical support, official recognition of professional efforts, and open acceptance and consideration of diverse points of view, to individuals and institutions to induce open participation in the process of program review.

H. Work to minimize the possibility of adversary situation developing among institutions of different levels and types by aiding the development of mutual respect for the academic content of courses and programs.

I. Expedite program review so that the time factor in the process does not become, in fact, a veto.

In addition to the academic programs to be coordinated by the proposed Academic Planning Committee, there is a whole range of extra-curricular programs offered at each of the one hundred and thirty-eight post-secondary institutions in Connecticut. These activities, some of which are purely recreational while others are viewed as direct efforts to enhance instructional programs, should be left to the individual institutions. Intimate knowledge of the personal interest and needs of the students is required when planning such activities.

However, it would assist the broader educational opportunities of the citizens of the State if informal cooperation among institutions were to be encouraged in this field and opportunities for exchange of such programs and the collective utilization of outstanding artists, etc. were made more generally available.

Increased communication among institutions regarding such extra-curricular programs would also be helpful.

Recommendation V - That the present Sub-Committee on Coordination and Planning be replaced by a permanent Academic Planning Committee under the aegis of the Commission for Higher Education with advise and consent authority over the review of programs, and that this new committee be representative of all seven "units," faculty, students, and the general public.

VI. Separate Advisory Bodies for General Career Fields

This recommendation, which resulted from the findings of the Resource Group IV Study Groups in each of these fields concerning the need for more and improved coordination of educational programs, should not be viewed merely as the proliferation of bureaucratic bodies, but rather as providing the essential vehicles for closer relationship between practitioners and educators, and for the

best utilization of the educational resources of the State. An important aspect of post-secondary education is its relationships to the labor market and job opportunities and the ability of graduates to obtain employment in fields for which they prepared.

Individual institutions have been attempting to meet the changing career needs of their students through the introduction of new programs. They have been hampered by the lack of accurate manpower demands information, insufficient relationships with practitioners, and only limited information about the efforts of other institutions. As a result, many program imbalances have occurred in the State.

While it would be philosophically inconsistent with democratic principles to establish program quotas in the name of manpower planning since it is not a function of education to guarantee a job anyway, these separate advisory bodies, in cooperation with the Academic Planning Committee of the Commission for Higher Education, could avoid significant program imbalances by providing to the students and institutions guidance and information on long-range employment opportunities, career programs in other institutions, and by aiding the correlation of formal educational experiences more closely with the world of work.

On the other hand, liberal arts programs based upon a very intimate knowledge of the more personal interests and needs of students and serving as the general undergirding for specific career programs, should be left primarily to the individual institutions for their development. Even in these fields, the efforts of the Academic Planning Committee in reviewing such programs would contribute to the value of the statewide system for the coordination of post-secondary educational programs.

The primary role of these advisory bodies would be to provide direct professional leadership in the coordination of career programs in their fields and to receive in-put from professional persons, groups, and interested members of the general public. These efforts are especially imperative since they directly affect the State's economy and require coordination to be effective.

In each of such general career fields, there now exists a variety of interested and dedicated public and private groups seeking to improve the education of persons for positions in those fields. The establishment of these advisory bodies under the Academic Planning Committee and the coordination of programs would tend to aid the improvement of the relationships between post-secondary education and the manpower needs and to avoid duplication of efforts and the possible inefficient utilization of resources.

Further, it is felt that the coordinated approach to post-secondary education, recommended throughout this report, cannot be implemented successfully through legislative mandate alone. There must be wide philosophical acceptance of the value of a statewide system for the coordination of post-secondary educational programs by the various students, faculty, administrators, board members, and others intimately involved in it. The creation of these separate advisory bodies under the Academic Planning Committee of the Commission for Higher Education with the personnel, funds, resources, and authority to gather data, to provide consulting and counseling services and to recommend program changes, would be in a very favorable position to gain the respect and cooperation of these various persons. Concern for institutional autonomy and consideration of the human element would further enhance the effectiveness of these advisory bodies.

Recommendation VI - That separate advisory bodies be established in such general career fields as business, technology, and industry; teacher education; criminal administration and social services; health professions; and environmental studies; to work directly with the proposed Academic Planning Committee of the Commission for Higher Education in the coordination of educational programs in these fields.

VII. Futures Research and the Methodology of Futures-Oriented Planning and Policy Making

While some institutions have already established "long-range planning committees," it is necessary that all post-secondary institutions be looking at least five to ten years ahead of their present supply/demand program balance, so that they will have a better chance to have ready the type, quality, and quantity of graduates which society will want and need in this relatively near-term future.

Leadership is needed to coordinate these long-range planning efforts and to collect and distribute data among the institutions, to aid the understanding of the public, and to support the conclusion that it is not enough for post-secondary education to be in a position by 1979 to provide for a particular number of business students, or engineers, or social scientists. It must assure that all possible thought be given to what each career field is apt to be like in the year 2000, and to what changes are required in the program thrust and curriculum to provide the soundest basis for the productive careers of the students being taught right now.

To some degree, the educational program planning process parallels the product planning process which has been developed in considerable depth in some businesses. However, there is an additional "futures" component to the education product which is substantially different. The education students receive must not only help them fulfill their immediate needs of getting jobs at the time of graduation,

but must also, and perhaps more importantly, provide a strong foundation for their continuing career and their other extra-career interests (such as family, citizenship, and avocational interests) during the following twenty to fifty years of their active lives. In other words, the educational system is providing a futures product today. In the same sense that an automobile is reasonably expected to last eight to ten years in service, an education should last, at least in considerable part, for twenty to fifty years. How can the providers of this kind of service be fully responsible unless they are doing the best job they practically can to assess what effects rapidly changing social, economic, and technical circumstances will have on the validity, appropriateness, and useful life of the educational programs being provided?

All strategic long-term planning is, or should be, aimed at helping the institution concerned adapt to the future in a manner which meets the institution's purposes and objectives. The rational starting place for long-range planning must be a view of the relevant future.

In the case of education, the relevant future should be studied at two different levels:

A. The likely mix of demand for programs and courses in the coming five to ten year period.

B. The nature of the still longer term future with which students are being trained to cope, so that the kind of education offered right now will be as useful as possible to students during their productive lives.

There are a number of particular program changes which can be suggested based on a study of future economic, social, and technological trends. More fundamentally, it is highly probable that research is needed on the structure of

knowledge and learning in order to facilitate inter-disciplinary work in dynamic complex systems, deal meaningfully with the accelerating information explosion, and help increase the efficiency of learning on a life-time basis. It is also felt that much more attention must be given to programs of continuing education, since the accelerating pace of change means that most people will require increasingly frequent updating and retreading of their educational background.

Specific program recommendations based on futures considerations are as follows:

A. Futures Studies

B. Systems Studies

C. Change Management and Adaptability to Change

D. New Emphasis on Management Studies

E. Environmental Studies and Technological Assessment

F. New Emphasis on International Studies

G. Continuing Education

H. Learning and Teaching

Recommendation VII - That the Commission for Higher Education provide leadership in introducing the aspect of futures research and the methodology of futures-oriented planning and policy making into the development of educational programs in Connecticut.

VIII. Effects on Lives of People

Master planning as a means of balancing the needs of people with the resources of the State to provide for those needs must never ignore the human element in its efforts to coordinate activities or to develop more efficient statewide utilization

of resources.

This admonition is extremely important in the development of master plans for the process of program review, for the development of programs at the several levels and types of institutions, and for consideration of the relevant future of educational programs in Connecticut. Inertia in the change process often displayed by individuals and groups of individuals, is based, primarily, upon a sincere concern for the changes that might occur in the personal and professional status of persons involved in the programs as they presently exist.

Wide participation in the planning process, availability of accurate data about present and future program needs, decrease in professional positions through attrition rather than direct elimination, provision for the personal program interests of students, and opportunities for retraining or reassignment of professional personnel are all ways through which a concern for the human element can be implemented.

Recommendation VIII - That the implementation of the various recommendations contained within this report be based upon due consideration of their effects on the lives of people since education is an enterprise concerned primarily with people and not with products.

IX. Funding

This report does not wish to further the concept that the only means of providing improved educational opportunities for the citizens of Connecticut is by the mere allocation of more funds. However, it is felt that adequate funds for the operation of the various committees and advisory bodies are essential to the successful completion of their responsibilities.

The establishment of the recommended statewide system for the coordination of post-secondary educational programs should result in some financial economies through the more effective use of all existing educational resources, through more utilization of innovative instructional techniques, and through more widespread employment of alternate approaches to education. Further funds might be saved by curtailing the building of new physical facilities except where detailed justification is present. In so doing, additional funds would then be available for program development through the various committees and advisory bodies, and for student and faculty assistance where appropriate.

It is difficult at this time to recommend specific amounts of funding except as they relate to the judgments made on an order of magnitude basis. Accordingly, it is recommended that the General Assembly authorize suitable continuing financial support and staffing to implement the legislative requirement for biennial updating of the Master Plan for Higher Education in Public Act 194 of 1972. An amount of $350,000 per year should be considered for this purpose at the State level. In addition, suitable budgetary provisions for planning within the advisory bodies and individual institutions should be supported and required.

It is further recommended that the above budgets are predicated on the assumption that no more than half would be spent on direct salaries and overhead. The balance would be available for acquiring and handling information, including subscriptions, reports, and books as well as seminars, training sessions, facilitation of research and resource efforts, and special studies.

Recommendation IX - That adequate funding be provided to implement the recommendations offered in this report and that procedures for the public accountability of such funds be developed to assure their efficient and effective use.

Section Two

Specific Questions Submitted to Resource Group IV (Programs) by the Connecticut Commission for Higher Education

I. List of Specific Questions

A. What is the current method for approving new programs in Connecticut's institutions of higher education?

B. How many and what kinds of new programs have been mounted since 1965?

C. What new programs are projected in the public and private sectors by 1979?

D. Should alternatives to higher education be established by state institutions as a means for occupational skill development through such devices as apprenticeships, on the job training, and service corps, etc.? If so, by whom?

E. Is there unnecessary program duplication among public institutions or between public and private institutions?

F. Are present program review methods responsive to emerging needs and to the elimination of unproductive activity? In the face of changing social and career needs, what alterations should colleges plan in their structure of programs?

G. Are there major programs in public higher education which can be eliminated and left to the private sector without significant social loss?

H. Under what conditions should programs and courses be eliminated?

I. In what ways can colleges and universities be helped to eliminate courses no longer necessary?

J. Are present mechanisms for new program approval and reevaluation of existing programs effective and adequate? Are the necessary steps available to avoid duplication of programs, elimination of out-dated programs, and the establishment of needed programs?

K. Should greater efforts be extended to avoid duplication between the public and private sectors? If so, how?

L. What new programs are needed in fields such as the following:

1. Business, Technology, and Industry
2. Teacher Education
3. Criminal Administration and Social Services
4. Health Professions
5. Environmental Concerns
6. Other Fields ?

M. Under what conditions should new graduate and professional programs be added? What regional opportunities exist for cooperation?

N. Should a Doctor of Arts degree be developed? If so, at what institutions?

O. Should a three-year baccalaureate be developed? If so, at which institutions?

II. Answers to Specific Questions

A. What is the current method of approving new programs in Connecticut's institutions of higher education?

In general, most institutions of higher education initially recommend the approval of a new program through a Curriculum Committee of the institution and the faculty of that institution. The recommendation is then sent to its Governing Board. Usually, if the Board is satisfied that the program should be added to the curriculum of the college, it makes a recommendation to the Commission for Higher Education. If the new program is recommended by a public college, the Commission for Higher Education considers the recommendation of the Board in its Sub-Committee on Coordination and Planning where it is moved to the Commission for Higher Education Ad Hoc Program Committee and approved for coordination if it is favorably received. It is then sent with a favorable recommendation to the Standing Committee on Accreditation of the Connecticut Council of Higher Education for processing and eventual licensing by the Commission for Higher

Education. Independent institutions bypass the intermediary stage for coordination and new program proposals go directly to the Standing Committee on Accreditation.

Please note that while the attached chart of programs licensed by the Commission for Higher Education includes programs for both public and private institutions, the attached chart of programs approved for coordination includes only programs for public institutions. Flow charts of the current method of approving new programs are available in the office of the Connecticut Commission for Higher Education, Hartford, Connecticut.

It is felt that such a method does not provide for adequate coordination, does not encourage innovation in programs nor require the participation of resource persons outside the educational enterprise in the development and planning of programs. Greater effort should be made to relate the individual program to the total educational system and to the structure and functioning of the society in which the system operates.

NEW PROGRAMS APPROVED FOR LICENSURE
BY THE
CONNECTICUT COMMISSION FOR HIGHER EDUCATION
1965-1972

INSTITUTION	PROGRAM
Albertus Magnus College	Teacher Preparation, Secondary Education teachers of -- English, French, German, Italian, Latin, Spanish, history, history and social studies, mathematics, biology, chemistry, physics, and general science, grades 7-12
Bridgeport Engineering Institute	Applied Mathematics
Central Connecticut State College	Special Education, M.S. French & Spanish, M.A. English, M.A. Health & Physical Education, B.S. Mathematics, History, M.A. Guidance Counselor, M.S. 6th Year, Readingg Industrial Technology Art Education & Music Education, B.S. Philosophy, B.A.
Eastern Connecticut State College	Biology, B.A. English, B.A. History, B.A. Mathematics, B.A. Spanish, B.A.
Fairfield University	Nursing, B.S. Communications, M.A.
Greater Hartford Community College	Child Care Public Administrative Assistant
Hartford State Technical College	Industrial Management Technology Fire Technology
Housatonic Community College	Medical Laboratory Assistant Medical Laboratory Technician Urban Technology Child Care Law Enforcement Health Care Administration

INSTITUTION	PROGRAM
Manchester Community College	Correctional Assistant Hotel-Restaurant Management Law Enforcement Occupational Therapy Public Services Careers Teacher Aide Library Technical Assistant Media Associate
Mattatuck Community College	Mental Health Radiologic Technology Police Science Administration Social Service Aide Child Care Nursing
Middlesex Community College	Radiologic Technology Public Service Assistant Informational Systems Mental Health Worker
Mohegan Community College	Child Care Law Enforcement
Northeast Regional Community College (Quinebaug Valley)	arts and science, general studies, business administration, accounting, and secretarial sciences
Northwestern Connecticut Community College	accounting, business administration, insurance and banking, executive secretarial, marketing and distribution Environmental Studies Law Enforcement Library Technical Assistant Recreation Teacher Aide Child Care
Norwalk Community College	Inhalation Therapy Law Enforcement Library Technical Assistant Nursing Recreational Leadership Early Childhood Education Human Services Curriculum
Norwalk State Technical College	Fire Administration and Technology Industrial Management Technology

INSTITUTION	PROGRAM
Quinnipiac College	Allied Health Biology, English, History, Psychology, B.A. Cardiopulmonary Technology, A.S. Radiologic Technology, A.S. Environmental Health Technology Teacher Education in Biology, English, History, M.A. Nursing, A.S. Medical Records Technician Mathematics, B.A. Psychology Spanish, B.A. Health Science, B.S. Health Services Administration, B.S.
Rensselaer Polytechnic Institute	Computer Science, M.S.
South Central Community College	Child Care and Guidance Food Service Management
Southern Connecticut State College	Biology, M.S. 6th Year School Psychologist 6th Year Special Education 6th Year Reading Chemistry, M.S. History, M.A.
Thames Valley State Technical College	Fire Administration and Technology Industrial Management Technology
Tunxis Community College	Graphic Design Law Enforcement
University of Bridgeport	Applied Mechanics, M.S. Electrical Engineering, M.S. Master's in biology, chemistry, economics, English, French, history, mathematics, physics, political science, and sociology Mechanical Engineering, M.S. Psychology, Master's Nursing, Master's

INSTITUTION	PROGRAM
University of Hartford	Master's Biology, Psychology, Sociology English, M.A. Public Administration, M.A. Doctor of Musical Arts
University of New Haven	Business, Engineering, General Studies, Associate Degree, Chemistry, Economics, English, History, Mathematics, Physics, B.A. Industrial Engineering, M.S., Master of Public Administration Criminal Justice, M.S.
Waterbury State Technical College	Fire Administration and Technology Industrial Management Technology
Western Connecticut State College	Business Administration, B.A. Music, B.A. English, M.A. Mathematics, M.A. 6th Year Elementary Education 6th Year Reading

PROGRAMS APPROVED FOR COORDINATION BY THE COMMISSION FOR HIGHER EDUCATION (from 1970)

Name	Degree	College	Approved SCP	Approved CHE
Radiologic Technologist	Assoc.	Mattatuck Community College	April 14, 1970	May 7, 1970
Library Technical Aide	Assoc.	Norwalk Community College	"	"
Materials Engineering Technology	Assoc.	Norwalk State Technical College	"	"
Industrial Management Technology	Assoc.	Thames Valley State Technical College	"	"
Law Enforcement	Assoc.	Mattatuck Community College	May 12, 1970	June 2, 1970
Environmental Health (Community Health Aide)	Assoc. 1 yr. C.	Middlesex Community College	"	"
Industrial Architectural and Build. Construc. Draft. Tech.	1 yr. C.	Norwalk State Technical College	"	"
Industrial Drafting Technology	1 yr. C.	Thames Valley State Tech. College	"	"
Industrial Surveying Technology	1 yr. C.	Hartford State Technical College	"	"
Industrial Electronics Technology	1 yr. C.	Waterbury State Technical College	"	"
Data Processing	Assoc.	Middlesex Community College	June 15, 1970	July 21, 1970
Community Health Aide (Environmental Health)	Assoc.	Northwestern Conn. Comm. College	"	"
Industrial Technology	B. S.	Central Conn. State College	"	"
Art Education	B. S.	Central Conn. State College	"	"
Music Education	B. S.	Central Conn. State College	"	"
Secondary Educa. in Mathematics	B. S.	Eastern Conn. State College	"	"
Psychology	M. A.	Southern Conn. State College	"	"
Guidance and Counseling	M. S.	Western Conn. State College	"	"
Psychological Examiner	M. S.	Western Conn. State College	"	"
Sixth Year Program in Elementary Education	M. S.	Western Conn. State College	"	"
Mathematics	M. A.	Western Conn. State College	"	"
Health Education	B. S.	Western Conn. State College	"	"
Italian Literature	Ph.D.	University of Connecticut	"	"
Religious Studies	Grad.Le.	University of Connecticut	"	"
Data Processing	Assoc.	Greater Hartford Community College	Feb. 22, 1971	March 2, 1971
Child Care	Assoc.	Greater Hartford Community College	"	"

PROGRAMS APPROVED FOR COORDINATION BY THE COMMISSION FOR HIGHER EDUCATION (from 1970)

Name	Degree	College	Approved SCP	Approved CHE
Child Care	Assoc.	Housatonic Community College	Feb. 22, 1971	March 2, 1971
Hospital Administrative Aide	Assoc.	Housatonic Community College	"	"
Law Enforcement	Assoc.	Housatonic Community College	"	"
X-Ray Technician (Radiology)	Assoc.	Housatonic Community College	"	"
Mental Health Worker	Assoc.	Middlesex Community College	"	"
Law Enforcement	Assoc.	Mohegan Community College	"	"
Child Care	Assoc.	Northwestern Connecticut Community College	"	"
Early Childhood Education	1 yr.C.-Assoc.	Norwalk Community College	"	"
Recreation Leadership	Assoc.	Norwalk Community College	"	"
Nursing	Assoc.	Mattatuck Community College	"	"
Data Processing	Assoc.	South Central Community College	"	"
Law Enforcement	Assoc.	Tunxis Community College	"	"
Graphic Design	Assoc.	Tunxis Community College	March 15, 1971	May 11, 1971
Child Care	Assoc.	Mattatuck Community College	"	"
Child Care	Assoc.	Mohegan Community College	"	"
Library Technical Assistant	Assoc.	Manchester Community College	"	"
Public Administration Assistant	Assoc.	Greater Hartford Community College	"	"
Social Service Aide	Assoc.	Greater Hartford Community College	"	"
Social Service Aide	Assoc.	Mohegan Community College	"	"
Dental Office Assistant	Assoc.	Mattatuck Community College	"	"
Medical Laboratory Technician	Assoc.	Greater Hartford Community College	"	"
Medical Records Technician	Assoc.	Greater Hartford Community Coll.	"	"
Media Associate	Assoc.	Manchester Community College	Sept. 28, 1971	Nov. 9, 1971
Nursing	Assoc.	Mohegan Community College	Jan. 4, 1972	Jan. 11, 1972
Educa. for the Prep. of Nurse-Aide Teachers, School Nurse Teachers Licensed Practical Nurse etc.	B. S.	Central Connecticut State College	"	"
History	M. A.	Western Connecticut State College	Feb. 1, 1972	Feb. 8, 1972

PROGRAMS APPROVED FOR COORDINATION BY THE COMMISSION FOR HIGHER EDUCATION (from 1970)

Name	Degree	College	Approved SCP	Approved CHE
Nursing	Assoc.	Manchester Community College	March 2, 1972	March 7, 1972
Social Service Aide	Assoc.	Norwalk Community College	March 2, 1972	March 7, 1972
Media Technology (Visual)	Assoc.	South Central Comm. Coll.	March 28, 1972	April 4, 1972
Radiologic Technologist	Assoc.	South Central Comm. Coll.	"	"
Radiation Therapy Technologist	Assoc.	South Central Comm. Coll.	"	"
Social Service Aide	Assoc.	South Central Comm. Coll.	"	"
Correctional Administration	Assoc.	Tunxis Community College	"	"
Child Care-Mental Health	Assoc.	Tunxis Community College	"	"

B. How many and what kinds of new programs have been mounted since 1965?

According to the chart attached to Question A, twenty-seven different colleges and universities in Connecticut have had one hundred and fifty-three new programs approved for licensure by the Commission for Higher Education since 1965. The majority of these have been two-year Associate Degree programs in a variety of career fields introduced at the Connecticut Regional Community Colleges. In addition, however, a wide range of Bachelor's and Master's Degree programs and Sixth Year programs have been implemented at a number of other public and private colleges and universities.

These programs were introduced during a period of expanding enrollments and increasing awareness of immediate career needs by the students. Hopefully, present program planning will begin to contemplate conditions of society through the year 2000 with the result that any new programs added in the future would also relate to the time dimension of the societal environment. It should be noted that students now entering college would be expecting to be approaching the apex of their professional careers in the year 2000.

C. What new programs are projected in the public and private sectors by 1979?

In the recent past, most individual institutions of higher education in Connecticut developed their own "master plans" which included the listing of specific new degree programs projected into the short term future and shared such information with the Commission for Higher Education. Such is not now the case. Apparently, in most of the one hundred and thirty-eight post-secondary institutions, program planning is

in a state of flux due to the rapidly changing circumstances, changing manpower needs, actual and predicted lower enrollments, greater demands on limited financial resources, and basic philosophical questions concerning the role of formal education in our society.

One obvious reaction to this dilemma on the part of individual institutions has been a more thorough review of their present offerings, a lowering of the proliferation rate of traditional programs, and a cautious move toward more relevant and popular programs. Other trends that are discernible are marked increases in both interdisciplinary programs and new career programs related rather directly to job opportunities.

Projecting new programs to 1979 in the public and private sectors is both a philosophical and practical problem and one that requires statewide leadership and coordination. Such general career fields as business, technology, and industry; teacher education; criminal administration and social services; health professions; and environmental studies; have displayed a need for program coordination. It is felt that the establishment of advisory bodies in such fields would be an important step in the right direction.

Further, it is felt that a moratorium on the implementation of any major new programs in any field until such a time as there exists a practical and coordinated review process for programs, would provide more time for a further assessment of the available long-range studies of the future for the purpose of projecting more wisely. To this point, such studies seem to reveal that, in general, all segments of the population will need better training and understanding to advance the economy and improve and maintain the quality of life now and in the future. New social

problems may be expected due to the greater spread between the skilled and the unskilled and, therefore, educational programs must provide a broad treatment of all segments of society, both for training and understanding. They should also provide a fundamental foundation for a particular skill. Hopefully, there will be universal education for at least fourteen years. Where higher education is merited, the last few years should be of a comprehensive nature to assure adequate preparation. This implies multiple tracks for various levels of effort and ability. Certification should be available where desired for each level of training and education.

These and other findings have direct bearing on Connecticut. We are facing an environmental problem in which there is danger that our land, waters, and air may become increasingly polluted. Our population will have expanding needs for energy, new sources of transportation, medical care, and jobs, many of which do not currently exist. Our population will have to be aware of, and will have to address itself to the solutions to problems in the political, economic, religious, social, intellectual, and aesthetic sectors. Thus, a well-trained, well-informed, educated citizenry capable of coping with our ever-increasing problems is our best hope for the future. In order to cope with the challenges of the future, post-secondary education must be prepared to go much farther than mere job training.

However, since business and industry in Connecticut hire a significant number of students who were educated outside the State, particularly in the case of mechanics, engineers, librarians, doctors and technicians, career educational opportunities for these skills should be expanded to accommodate local requirements. Further, it is gratifying to note that a substantial number of students educated in Connecticut are appreciated by employers beyond the State's boundaries. This exchange of students

as employees is commendable and should be considered by those projecting new programs in Connecticut's post-secondary institutions.

D. Should alternatives to higher education be established by State institutions as a means for occupational skill development through such devices as apprenticeships, on-the-job training, and service corps, etc. ? If so, by whom ?

Alternatives to the current forms of post-secondary education should be developed. A cooperative education program should be arranged between the educational institutions and industry with a supervised apprenticeship. Certification could be awarded by examination or following a demonstration of successful experiences. Such certification should, in part, be based upon the qualifications required by organizations such as professional societies, trade organizations, and trade unions.

There is increasing need for more continuous and effective interaction between educational institutions and the action institutions of our State, such as government agencies, businesses, hospitals, and social service agencies. This interaction, and the resulting alternatives, can be extremely useful to all concerned - educational institutions, action institutions, and students. Educational alternatives can and should be developed in all of the following ways:

1. Interactive consultation during educational program planning and development.
2. Guidance to students and institutions especially as it reveals the opportunities and limitations available in various careers and the relationships between those careers and educational p ograms.
3. Work/study programs.
4. Cooperation and contact within the context of conventional post-secondary education. (For example, having class projects or research work done within cooperating action institutions.)

5. Development of new types of occupational skill programs within, or partially within, cooperating action institutions, but under the direction and in accordance with the standards of the educational institution.
6. A variety of cooperative approaches to formal and informal continuing education, including job retraining for adults and opportunities to pursue avocational, recreational, and other leisure interests.
7. Flexible utilization of time, place, and faculty personnel through short-term, specialized training programs, offered at various places by a variety of "floating" teaching faculty including non-educators experienced in the particular field.

The educational system of the future will have to be both broad-based, to provide for life in an increasingly complex society, as well as specific to meet immediate demands for jobs. The future will be characterized by rapid change. We will see the increasing emergence of members of disadvantaged groups (sexual, racial, ethnic, religious, etc.). They will continue to press for equal educational opportunities and for relevant academic programs. The education of the future will have to provide in an unbiased fashion for the following:

1. Continuing educational opportunities
2. Retraining procedures
3. International studies
4. Fresh perspectives
5. Increasing involvement of women and minority group members

The foregoing considerations suggest that educational institutions in Connecticut must achieve more coordination in the development or the changing of programs, and more collaboration and cooperation in the development of reasonable alternatives to supplement and complement existing programs. The system for the coordination of post-secondary educational programs in Connecticut must share in a greater amount of interdependence with public, vocational, avocational, executive, and legislative sources. Then, each institution, singly, and the system, collectively, can benefit from advisory groups of the lay public to reflect the changing needs of their constituencies, and to aid in the identification of reasonable educational alternatives.

Such alternatives to post-secondary education should be coordinated under the leadership of the Commission for Higher Education with participation by all levels and types of educational institutions, including both public and private, and by organized groups and agencies most intimately involved in the occupations and/or professions under consideration.

E. Is there unnecessary program duplication among public institutions or between public and private institutions?

As stated previously, the present methods or program approval do not prevent program duplication, especially in the private sector. There exists now no rational link in program development between public and private or between private institutions. There is at least the appearance of unnecessary duplication of programs in neighboring institutions. Where few students are enrolled in one program at one school, economies might be effected by an interchange of students and proper scheduling.

The educational mix of the future must allow for variety and diversity. Consequently, some degree of duplication will, and of necessity, must occur. It is hoped,

however, that the more balanced mechanisms for program approval recommended in this report for both public and private institutions will be implemented to minimize unnecessary duplication.

A program can only be considered unnecessarily duplicative at an institution when it fails to serve the needs of an adequate number number of students to make it economically feasible and when such a program is available at a reasonably nearby institution of similar level and type. The geographic location of an institution and the primary nature of its student body, residents or commuters, are important factors determining the necessity of a program. Similar liberal arts programs are offered at almost every college and university in Connecticut and are not necessarily duplicative since such academic departments are required to provide the general education course component for all students regardless of their program majors.

It is in the field of career programs that some unnecessary duplication becomes evident. There appears to have been an unorganized, uncoordinated rush by individual institutions to develop "relevant" career programs in the health professions as the results of publicity about job opportunities. These programs lose a great deal of relevance when the supply of graduates far exceeds the manpower demands.

Since 1970, of the sixty programs approved for coordination purposes by the Commission for Higher Education, nineteen were in the health professions field. From 1965-1972, the Commission for Higher Education licensed a total of 153 new programs of which twenty-two were in health fields. Such events have resulted in an oversupply of persons in a number of career fields, notably in radiologic technology as indicated by the Chief Technologist at one of Connecticut's hospitals who referred to the finding of a 1971 survey by the Connecticut Society of the

Radiologic Technologists. This survey found that at present there are approximately seventy technological openings per year throughout the State. This State is currently training just under six-hundred students. In 1980, there will be approximately one-hundred job openings per year throughout the State. At the current rate of program explosion, the survey found the field is becoming oversupplied now and will continue to do so.

A possible further example of unnecessary program duplication occurred recently when several private institutions received approval from the Commission for Higher Education for new teacher education programs at a time when other institutions are grappling with the problems of the over-production of teachers and lessening manpower demands in this field.

In the specific career fields of criminal justice, social service, and programs geared directly to serve business, technology, and industry, and environmental studies, there does not, at present, appear to be unnecessary duplication of programs. However, every effort should be made to prevent the "bandwagon" effect from occurring in these fields in much the same way as occurred in the health professions field previously described. It is felt that one major way of preventing this would be the implementation of the statewide system for the coordination of post-secondary educational programs in Connecticut as recommended in this report.

F. Are present program review methods responsive to emerging needs and to the elimination of unproductive activity? In the face of changing social and career needs, what alterations should colleges plan in their structure of programs?

Present program review methods are not responsive to emerging needs and to the elimination of unproductive activity since such responsibilities are presently

assumed almost completely by the individual institutions. The lack of common external guidelines and the lack of incentives for program coordination, development, or deletion often cause individual institutions to ignore this vital task. Even those institutions that recognize this responsibility find it difficult to add new and needed programs due to a lack of special funds for program development. The elimination of programs presents unusually sensitive problems to educational institutions since it involves the needs of students and faculty, and provision for their future personal and professional status.

Most schools and colleges are aware of the changing social and career needs of their students and have, to the limits of their resources, introduced new programs. There is a limit, however, to the alterations that an individual institution can provide in its programming. More attention should be given on a statewide basis to inter-institutional program planning and implementation. For example, according to testimony received, there is no identifiable link between health programs and social needs which reinforces the need for proper review mechanisms and accountability of an identified agency, i.e., the proposed advisory body for health professions as a component of the Commission for Higher Education.

There is little evidence that either private or public institutions are making serious efforts to assess adequately the relevant future as part of the program planning process. Nor is there much evidence that the approaches taken to long-range planning are adequate. Individual colleges should be encouraged to develop future study committees to assess current and future economic, social, political, and intellectual trends and to propose programs designed to meet changing demands now and in the future, and share the results of their studies through the Commission for Higher Education.

G. Are there major programs in public higher education which can be eliminated and left to the private sector without significant loss?

Education, as an enterprise concerned with people, must utilize its resources to prevent significant social loss at any time and under any circumstances. In regard to programs, there is an immediate inclination to answer this question with an unqualified "no." However, there is no apparent compelling reason why Connecticut public institutions of higher education must offer a complete array of all possible programs. Some may better be left to private institutions. Some may better be provided by institutions outside the State. Determining exactly what major programs in public higher education can be eliminated safely requires the existence of the diversified, flexible, accessible, and open system for the coordination of post-secondary educational programs toward which this report is directed. Such determination should involve discussions between both the public and private sectors of post-secondary education and should include complementary programs, an interchange of resources, coordination of efforts, and the provision of opportunity to students of the various regions of the State to participate in programs.

Social loss would occur if any major program were eliminated from public higher education which did not account for the future personal and professional status of any students and faculty involved in that program. The availability of a similar high-quality program in a private institution of the same level at a cost not prohibitive to qualified students must also be considered. Correspondingly, there may be programs offered at private institutions which could be more effectively offered at a publicly supported institution. Programs requiring large capital investments for installation and modernization deserve special scrutiny.

While concern for the individual is forever paramount, the utilization of educational resources in the form of programs may require thoughtful decisions on the immediate and future impact on the total society and be predicated on the premise of providing the greatest good for the greatest number of citizens.

H. Under what conditions should programs and courses be eliminated?

They should be eliminated if they no longer serve the needs of the student body or the society as a whole, including employers of graduates. In most institutions, they should be eliminated if the cost of the program is out of proportion to the cost of other programs within the institution, and there is not sufficient justification for continuing this situation. Programs should be eliminated when they no longer promote the basic objectives of the institution.

Put another way, programs and courses should be eliminated when there is insufficient demand, or when poor cost/effectiveness is not offset by absolutely compelling need. Individual departments and institutions should be rigorously encouraged to use cooperative programs with other institutions where practical, or to admit that they cannot be all things to all people. Programs and courses should also be eliminated when they cannot be done well, whether from lack of talent or lack of money.

I. In what ways can colleges and universities be helped to eliminate course no longer necessary?

Inertia, vested interest, and emotional blocks make it extremely difficult to eliminate any obsolete activity which is not directly exposed to merciless economic pressure. Before exposure to such pressure, consideration should be given to providing opportunities for continuation in post-secondary education in a more productive

way for those persons presently involved in unnecessary courses. Such opportunities would tend to dissipate some of the inertia and remove some of the emotional blocks to change. In addition, the development of an attractive early retirement program might also stimulate the deletion of courses that are no longer necessary.

Once the human element of the problem is addressed, educational institutions might need further help in their efforts to determine exactly which courses are no longer necessary. The various governing boards can require that a periodic review be undertaken by each institution which calls for a study of existing programs and the development of a rationale for their continued existence. Such a study should include the development and use of a method for assessing the cost/revenue relationship of courses and programs, as one necessary starting point for highlighting the problem areas.

Is there any way to provide the boards, administrators, and faculty with any outside help in their efforts to wrestle with the continuing and ever-present problems regarding the elimination of courses and programs? There might be. Could we visualize a statewide service analogous to accreditation? Any public or private institution could request that a special review committee be empanelled to help one of their departments analyze programs and courses for possible consolidation and/or elimination. Members of such panels should reflect a range of special competence, including knowledge of the academic field, active practice in the career for which the programs prepare students, and special competence in analyzing cost/effectiveness and suggesting alternatives.

The intent of this suggestion is that the reports of these ad hoc panels would be given only to the requesting institution, and would not in any way be authoritative.

The process could be thought of as a special form of consulting, available on request. It is likely that boards, administrators, and faculty would have their own strong incentives for employing this kind of help from time to time.

Further, to be truly effective, the individual institutional efforts in this direction of a stronger plan for the elimination of courses no longer necessary must be coupled with a coordinated statewide process for the identification of needs and opportunities for eliminating or rationalizing program offerings.

J. Are present mechanisms for new program approval and reevaluation of existing programs effective and adequate? Are the necessary steps available to avoid duplication of programs, elimination of out-dated programs, and the establishment of needed programs?

Present mechanisms for program approval and the avoidance of duplication are inadequate. This is due to the fact that only the public institutions are required to submit their planned new programs to the Commission for Higher Education for consideration by the Sub-Committee on Coordination and Planning. This, of course, does not solve the problem of duplication of programs. There is some concern in the public sector that the present process militates against the development of comprehensive programming in the public institutions and encourages the duplication of existing programs by the private institutions. This could be reduced if all institutions went through a coordinating phase with respect to new programs.

At the present time, there is no statewide mechanism that effectively deals with the elimination of out-dated programs or encourages the establishment of needed programs. This perhaps could be an important function of the proposed Academic Planning Committee of the Commission for Higher Education.

All seven "units" of post-secondary education in Connecticut (proprietary schools, hospital schools, technical colleges, community colleges, state colleges, the University of Connecticut, and the private colleges and universities) should be included as part of any mechanisms developed to coordinate program change on a statewide basis.

While the efforts of individual and separate institutions to introduce program changes on their own campuses have been serious and dedicated, the need for coordination becomes more apparent each day. For instance, while the technical colleges are doing an outstanding job in training two-year certified technicians, many of whom are capable of completing four-year technical programs, problems arise regarding transfer credits and admissions. Further, the community colleges in extending improved educational opportunities including transfer to baccalaureate programs, should not be allowed to compromise the opportunities for appropriate job-oriented, two-year terminal programs. Therefore, it would seem appropriate for the technical and community colleges to be located in close proximity to permit qualified students to study the subjects offered by each other. There are a number of appropriate and significant differences in objectives between the technical colleges and the community colleges, and both programs are vitally needed. Any potential consideration of administrative coordination of these two different types of institutions should provide adequate and suitable safeguards for the protection of both purposes.

The implementation of statewide coordinated mechanisms for program change would also permit the evaluation of the feasibility of establishing a multi-level ability track system of programs in post-secondary institutions of Connecticut. Such a system, recognizing various levels of ability and different career requirements of students, would introduce programs of study on high, intermediate, and low levels of ability and,

thusly, permit more students to achieve an appropriate understanding of the subject matter to the extent required for their own personal and professional goals.

K. Should greater efforts be extended to avoid duplication between the public and private sectors? If so, how?

Yes, since there is currently a safeguard only against duplication placed on the public institutions, but not on the private ones. If all institutions that made use of public funding for programs for which public funds were sought or offered submitted their plans to the same coordinating body, there would be a possibility of avoiding duplication. The make-up of that coordinating body would be extremely important in insuring that all types of institutions had adequate representation.

Duplication, in itself, is not necessarily undesirable, and competition between institutions or between public and private sectors may lead to quality programs all over. However, these considerations must be weighed in the light of economic considerations, in light of the needs of students, and in light of the fact that some private institutions have a somewhat more national constituency.

Where duplicate programs or courses exist, but there is low enrollment at the course, the institutions should be encouraged to share the students. With the mobility that current and future students enjoy, it does not appear too difficult for the student to attend some classes at a neighboring institution and still receive full credit from the parent institution.

Certain general career fields may require the establishment of separate advisory bodies to deal with the problems of program change and the avoidance of duplication. Evidence supports such a need.

L. What new programs are needed in fields such as the following:

1. Business, Technology, and Industry
2. Teacher Education
3. Criminal Administration and Social Services
4. Health Professions
5. Environmental Concerns
6. Other Fields?

The magnitude of the fields listed above is such that separate study groups within Resource Group IV were established for each, including the addition of "The Future of the Liberal Arts." Direct and detailed attention to each of these fields revealed that many more efforts need to be put forth on a coordinated, statewide basis to produce more accurate statistical information regarding enrollment projections and manpower demands, and to determine the possible program contributions of each level and type of institution. Separate advisory bodies for the first five fields are recommended as one means of obtaining such information and analyzing it in relation to the coordination of programs.

On the other hand, it is felt that the future program contributions of the liberal arts to the system for the coordination of post-secondary educational programs can be enhanced by leaving such program analysis primarily to the individual institution. Enrollments in liberal arts are declining and the current trend is towards vocational or career-oriented education. The handwriting on the wall was explicitly described by Mr. L. Glenny at the Master Plan colloquium held at Southern Connecticut State College on September 25, 1972 - Document #6, Commission for Higher Education. Mr. Glenny pointed out that the current situation parallels that of the 1830's to 1850's when classical Latin and Greek education was no longer considered "relevant" and institutions of higher learning either changed to meet new demands or went out of

existence. The relevant areas in the mid-1800's were agriculture and mechanic arts. Today, there is a broad range of relevant, career-oriented disciplines which students are seeking out sometimes to the detriment of contemporary "pure" liberal arts programs (which differ considerably from those of the last century).

Despite the bleak picture for the contemporary brand of "pure" liberal arts, it is premature to sound the death knell of a liberal education. We must, however, heed the lessons of the last century and change in response to students' needs and interests. There are purists among us who will insist upon upholding their lofty standards, just as there are opportunists who will pander to the desires of some students for courses dealing with the latest popular fad. Between these extremes lies a fallow area in which educators can respond to changing student interests and to demands for relevance without compromising either principles or standards. Strong interest has been demonstrated on the part of some students and some faculty towards course offerings with fresh orientations and perspectives. Especially, in a period of declining enrollment, these new trends should be encouraged and fostered. Specifically, the reawakening feminist movement, the introduction of ethnic, racial, and international studies programs, and the increased importance of interdisciplinary studies are but a few of these new trends.

In order to foster fresh perspectives, encourage these new trends, and to maintain the significance of the liberal arts, each institution must include a liberal arts component designed for the needs the institution serves. Each must be as free as possible to develop the kind of liberal arts program best suited to its own unique identity. This is particularly true if institutions are to be able to encourage staff to develop and engage in innovative and desirable interdisciplinary programs. There must be time for intellectual retooling. Institutions must be supported in their attempts to solve the problems

of faculty logistics created by new programs. In short, the wisest response to the needs of the liberal arts is a combination of support for more faculty time and for experimental programs and support for institutional autonomy to help create a pool of cooperative talent on which the State can draw across institutional lines. Even in the liberal arts, the efforts of the Academic Planning Committee in reviewing such programs, would contribute to their impact on the statewide system for the coordination of post-secondary educational programs and to the benefit of students throughout the State.

1. Business, Technology, and Industry

It is recommended that increased educational opportunities be made available for those employed in business, technology, and industry. It is further recommended that cooperative work-study programs be made an available elective program for those students in post-secondary education whose goal is employment in business, technology, and industry.

There were a number of responses by those contacted by this Study Group. The majority of responses did recommend in-service, or continuing education, or short, or part-time evening, or Saturday courses for those presently employed. These responses agree with the forecast by the Institute for the Future in that "Higher Education will become a continuous process with frequent periods of training and employment interspersed."[1] This also agrees essentially with the recommendation of the Carnegie Commission on Higher Education "that opportunities be created for persons to reenter higher education throughout their active careers in regular day-time classes, night-time classes, summer courses, and special short-term programs, with degrees and certificates available as appropriate."[2]

Such programs will help to increase productivity, which is needed in business, technology, and industry, and will ease conversion problems, such as we are experiencing with winding down the war, to cite just two examples important to Connecticut.[3] As noted in footnote one, "the dynamic nature of industry in Connecticut is continually making some skills obsolete and demanding new ones. The State should employ available educational facilities and personnel to retrain adults in new skills after school hours."[1] The responses also agree with the recommendation "that opportunities be expanded for students to alternate employment and study, such as the 'sandwich' programs in Great Britain and the programs at some American colleges."[2] At present, there are over sixty American colleges and universities offering such programs of alternating periods of study on campus and work off campus.[2] It was also pointed out that "Major emphasis should be placed upon a shift from passive acquisition of knowledge toward involvement of students in basic principles and their applications in the real world."[1]

Footnotes

1. "Issues and Opportunities in the State of Connecticut: 1970-2000" by Selwyn Enzer and Raul de Brigard. Institute for the Future Report R-8, March 1970

2. "Less Time, More Options - Education Beyond the High School," by the Carnegie Commission on Higher Education, published by the McGraw-Hill Book Company, January 1971.

3. "Our Manpower Future - Connecticut 1970-1985" by the Labor Education Center at the University of Connecticut (prepared by David Pinsky), 1970.

2. Teacher Education

This Study Group interviewed appropriate professional persons from the various institutions of higher education offering teacher education programs. Many of them

indicated a concern for the apparent over-supply of classroom teachers being prepared and produced in Connecticut. In regard to new programs, it was felt that additional emphasis would have to be placed upon the training of educational specialists in such fields as initial and remedial reading programs, programs for the exceptional child, urban education, and supervision of the instructional process.

Further, it was felt that the variety of levels and types of teacher education institutions is adequate to meet the needs of Connecticut now and in the future. What is required is a coordinated effort on the part of those institutions to identify those relevant needs and to determine their individual and collective abilities to improve the quality of teacher education programs in Connecticut.

3. Criminal Administration and Social Services

There is a belief among the respondents to inquiries from this Study Group that in Criminal Administration there should be another program on the graduate level established in the public sector; that the greater integration of the two-year programs with the four-year programs should be formalized in both social services and criminal administration; and that a coordinated statewide advisory body in the administration of justice would be of benefit. This is especially true when criminal justice is viewed as a system rather than a disjointed series of occupations involving police, corrections, and the courts.

One response indicated the need for a baccalaureate program in corrections that would be less occupationally oriented and with more of a universal approach to social behavior.

4. Health Professions

The magnitude of the problems surrounding the introduction of new programs in the health professions makes it questionable to suggest specific programs at this time. Almost every level and type of institution in Connecticut is presently involved in some aspect of the education of health professions personnel from professional practitioners, administrative and service personnel to technicians.

A review of these various and separate programs was made by this Study Group and it was concluded that there is need for a fresh approach to education in the health fields. This will require not only the development of a new system of affiliations and a new system of financing existing institutions, but also a new approach to the basic core of education, particularly in medicine. Emphasis must be placed on the openness and flexibility of the new system of health education and on the broad involvement of many institutions throughout the State. This would include both private and public institutions that have the facilities, the desire, and the commitment necessary to be involved in health education. There must be assurance of quality by augmentation of the trend of returning certain major basic disciplines to the university setting, while at the same time broadening the base of clinical training by better utilization of existing staffs and service facilities. The concept of a clinical center as an institution or group of affiliated institutions which serve health care needs at a number of different levels must be further developed and refined. Such a center could have a number of affiliations, both public and private, and could serve as a focus for care and for education.

Further, there exists a need for mobilizing and coordinating the widely diverse resources (public and private institutions, universities, colleges, junior colleges, clinics, hospitals, etc.) within the State toward the production of health care manpower.

Such coordination in the health fields is not now easily accomplished; therefore, a statewide advisory body is recommended to deal specifically with the multifaceted and diffuse problems of education in the health fields. It is particularly needed to provide a mechanism for the review and revision of the multiple programs being initiated.

In spite of the fact that a number of professional groups have gathered data for some time, no one has currently made an effective effort by which sound educational planning and coordination, based on the studies they have made, can be accomplished. Although health care coordination appears to be receiving attention in the recent Federal legislation for Comprehensive Health Planning, few efforts have been made toward coordinating the education of health care personnel. A formally constituted body is required for this purpose. This body must be able to respond promptly to changes. It should have the capacity to stimulate and to coordinate planning to fill the gaps left unfilled because individual institutions had not requested the opportunity to undertake programs.

5. Environmental Concerns

This is a burgeoning field and many new programs are needed. Environmental education serves different purposes and cannot be treated as monolithic. Programs should be geared to two-year, four-year, and graduate curricula. Most environmental education should be included within other curricula. Degree-granting environmental programs, per se, should represent a minor portion of the environmental training provided in Connecticut.

The Study Group was able to identify several main categories:

a. Environmental education for the nonspecialist (environmental literacy):
(general education, community education, teacher preparation)

The purpose of nonspecialist education (where the bulk of the effort should go) is to increase environmental awareness and knowledge on the part of those who, by their everyday decisions in their homes and communities, have a great impact on the environment. This type of education should not be on a "one-shot" basis, but represent a continuing effort directed towards students, former students (especially teachers), and non-students.

Faculty at a number of institutions reach the general public through the media. This should be encouraged and supported in a systematic way. In addition, an environmental extension service, comparable to the agricultural extension services which have served the farmers of Connecticut and other states, should be established.

b. Environmental education for the technologist: specialized training

There will be an increasing need for persons, at the associate or baccalaureate level, trained to administer environmental laws, e.g., Environmentalist/Sanitarians (Environmental Health Technologists). These persons should have a basic science training as well as practical, occupational training in order to permit them to adapt to technological advances.

c. Environmental education at the advance level: graduate level training and research

There are several programs in Connecticut at the graduate and post-graduate levels (particularly at Yale). With more State and institutional support, we have the potential for stronger, more significant programs than currently exist. For example, Connecticut should make a greater effort than at present in the areas of Marine Sciences. We have the coastline, the ecological problems, and the economic and recreational incentives to do more than we are in this area.

In addition to insufficient funding, one of the factors impeding advanced environmental education and research in Connecticut is the shortage of appropriate "laboratories." Much environmental study and research involves observations of natural areas. To understand how the ecosystem operates, and how man's activities impinge upon it, large tracts in diverse habitats are required. As the State's population grows, natural areas are irretrievably lost. Those natural areas held by institutions of higher learning are becoming increasingly valuable as research and training laboratories and also as open spaces available to the citizens of Connecticut.

Basic research is an important component of any advanced program. Without a substantial basic research program to back up the applied research and teaching aspects, environmental programs can degenerate into the immediate problem-solving approach and "ecofads." In addition, we are woefully ignorant in vast areas in which decisions must be made. Only research can provide sound answers.

In addition to the increased need for specialists, there is also a great and growing need for broadly trained environmentalists who are conversant with the fields of law, engineering, economics, etc., as well as with the natural, physical, and social sciences. Only such broadly trained persons would have the breadth to introduce and implement sound environmental policies.

6. Other Fields

The examination of the need for new programs in these five fields also revealed the following concepts. Technology programs should continue to be required and should be

frequently reviewed to reflect the latest scientific achievements. In varying amounts, technology will impact the first five fields. The teaching staffs should be provided ample opportunity to follow significant technical developments. The laboratories and teaching aids should be up-to-date. With the cost of this equipment being so high, exceptional care must be given to program coordination between the various institutions where technology is taught.

In any specialized field of education, an understanding of other fields should also be provided. Programs such as Bio-Engineering and Legal Accounting should be provided. The educational mix of the future should include, in addition to the general arts and some degree of job preparation, the following components:

a. Interdisciplinary Training

b. Futures Analysis

c. Systems Analysis

d. Environmental Awareness

e. Social Awareness

f. Management Principles

M. Under what conditions should new graduate and professional programs be added? What regional opportunities exist for cooperation?

Graduate and professional programs are relatively costly to operate and tend to make extensive demands on the educational resources of an institution. Accordingly, they should be added only after the following steps are taken on an institutional, statewide, and regional basis:

1. Documentation of need related to social significance

2. Resource capability

3. Budgetary analysis and justification

4. Institutional responsibility for student placement

Further, careful collection and analysis of appropriate data about a given program require that a variety of sources be contacted. For example, the proposed advisory body on the health professions of the Commission for Higher Education should coordinate these activities in one field and, in so doing, gather information and receive assistance about health profession career needs from such sources as the following:

1. State Department of Labor

2. Connecticut Institute of Health Manpower Resources

3. Connecticut Regional Medical Program

4. Comprehensive Health Planning (A & B Agencies)

5. New Haven Institute of Allied Health Careers

6. Professional Societies

7. New England Board of Higher Education

Similar coordinative activities should be completed by the advisory bodies in such other general career fields as business,technology, and industry; teacher education; criminal administration and social services; and environmental studies.

Because of the tremendous impact of graduate and professional programs on the educational activities and plans of any state, regionalization is especially appropriate on this level. Already, the Connecticut State Colleges and the University of Connecticut are actively and formally involved on the graduate level in the New England Regional Student Program as coordinated by the New England Board of Higher Education. This vehicle ought to be utilized as one means of extending the graduate and professional educational opportunities of Connecticut citizens. Regional opportunities should be

assessed before introducing new programs.

In the final analysis, new graduate and professional programs should be added only if they are needed in the state of Connecticut or in a region, provided they are not offered in close proximity and provided the demand is sufficient to carry the new program.

It would be worthwhile to examine closely the results of a study, "Survey of Changes in Graduate Programs in Higher Education," completed by the Higher Education Panel of the American Council on Education, June, 1972. This study of 813 institutions of higher education in the United States which was organized by levels and types of institutions, and levels and fields of graduate programs, lists the principal reasons for the addition or elimination of graduate programs from 1970-74 as given by the participating institutions. Such a list might provide a useful guide to the establishment of detailed criteria for determining the conditions under which new graduate programs should be added or deleted in Connecticut institutions.

N. Should a Doctor of Arts degree be developed? If so, at what institutions?

As recently as 1971, both the Connecticut State Colleges and the University of Connecticut were considering the development of separate Doctor of Arts degree programs, the major emphasis of which was to be the training of persons for teaching positions in institutions of higher education. Contrasting the traditional Doctor of Philosophy degree programs with their emphasis on doing research, the Doctor of Arts degree programs were to include supervised teaching internships and special evaluation of teaching competency.

Currently, the decreasing enrollments in colleges, and the widely publicized oversupply of Ph. D.'s, have made the need for such programs less imperative. More attention is being and should be focused upon the retraining of teaching faculty through in-service programs and the recycling of other Ph. D.'s into teaching disciplines where there is a need for faculty.

While it is recommended that such Doctor of Arts degree programs emphasizing the teaching role not be developed in Connecticut at this time, it is important that further study of doctoral programs in such fields as public administration, criminal justice, and social work be initiated.

O. Should a three-year baccalaureate be developed? If so, at what institutions?

All institutions of post-secondary education should investigate thoughtfully and thoroughly means through which they can make more effective use of time as related to educational programs. There is nothing sacred about the time sequence of the traditional two-year degree or the four-year degree. Every effort should be made to meet the current needs of students through experimental "college calendars" including such things as credit by examination, credit for non-academic experiences, work-study programs, short and long-term institutes, summer sessions, evening courses, trimester plans, and the quarter system.

One such experiment could be the formal introduction of a three-year baccalaureate program at one public and one private college for the purpose of evaluating its results in two different types of institutions.

On the other hand, institutions should be free to award the appropriate degree at whatever time a student successfully completes the degree requirements of that

institution.

The widespread utilization of the three-year baccalaureate degree program might provide an alternative to the longer term involvement of students with an institution and tend to conserve existing educational resources such as faculty and facilities. Such utilization could be in a number of academic fields, but there is not much support for three-year professional degrees such as in business or engineering. The Carnegie Commission did recommend three-year baccalaureate programs, but the Resource Group IV Study Group on Business, Technology, and Industry does not recommend three-year programs in professional areas.

Section Three

Sub-Committee Reports

I. Sub-Committee on Process

Realizing that the required questions represented only a minimum data requirement and that the answers did not exhaust all possible discussion on the important topic of programs in the post-secondary institutions in Connecticut, the Sub-Committee on Process now offers some thoughts on additional areas of concern.

A. One of the problems in developing a process for statewide coordination of educational programs is to balance public interest with an appropriate degree of institutional autonomy for the purpose of establishing a quality diversified, flexible, accessible, and open system for the coordination of post-secondary educational programs in Connecticut. There are presently 138 post-secondary institutions in Connecticut available to serve the approximately 150,000 persons desiring post-secondary educational opportunities each year. These institutions are sufficiently diverse to provide educational opportunities for Connecticut citizens. This diversity need to be coupled with accessibility, flexibility, and coordination.

B. An important aspect of post-secondary education is its relationships to the labor market and job opportunities and the ability of graduates to obtain employment in fields for which they prepared. However, it would be philosophically

inconsistent with democratic principles to establish program quotas in the name of manpower planning since it is not a function of education to guarantee a job anyway. What the institutions, singly, and the system, collectively, can do are to provide guidance and information on long-range employment opportunities, to correlate formal educational experiences more closely with the world of work, to increase opportunities for retraining and reentry into post-secondary education, and to decrease the emphasis on paper credentials as prerequisite to employment.

The establishment of a statewide process of program review under the Academic Planning Committee and the coordination of programs would tend to aid the improvement of the relationships between post-secondary education and the manpower needs in the following ways.

1. To facilitate movement of students among the various levels and types of institutions and to implement viable career programs. In each career field, there should be a spectrum of practitioners including specialists, generalists, paraprofessionals, technicians, assistants and aides, and there should be, within the system of post-secondary education, opportunities for people to proceed through a commensurate spectrum of programs necessary to move in a career field.
2. To avoid unnecessary duplication of specialized programs, to maintain quality through a pooling of resources, and to prevent "locking in" of institutions and individuals to programs no longer relevant to their needs.
3. To permit rapid adjustment to changing vocational needs of students. Citizens of all ages need advice and information about how best to

satisfy their educational needs as well as how to relate them to employment prospects. Institutions need information dealing with the relationships between national manpower projections and the state educational planning pertaining to manpower. The Commission for Higher Education should provide this information through sponsored studies and should offer a broad guidance program including the publication of all educational opportunities in the system, the careers to which programs are primarily addressed, and a clear statement of the most efficient procedures for student movement through the system. Updated information on the short-range future excesses and shortages of graduates in certain fields should also be readily available to individuals and institutions.

C. Considerations of public accountability require that the public be assured that public funds for post-secondary education are being spent efficiently and effectively and that private institutions, sharing in those funds for programs for which such funds were sought and offered, be held to the same accountability as the public institutions. Efficient utilization of funds requires coordination of program planning and that the approximately 150,000 persons desiring post-secondary education programs be served by the 138 different post-secondary institutions in Connecticut in a high quality manner. Such a demand should be met with the following guidelines in mind.

1. The principle of public accountability should not be permitted to stifle local institutional planning. Diversity and flexibility are only possible

when individual institutions contribute to the system for the coordination of post-secondary educational programs through the utilization of their institutional autonomy in the employment of the unique talents and characteristics of their faculties and students. By developing special academic, professional, vocational, and public service programs, and by identifying and responding to their particular roles in meeting the educational needs of the citizens of Connecticut and sharing such plans and information with the Academic Planning Committee, the individual institutions could contribute to the strengthening of the whole statewide educational program.

2. The major responsibility of the Academic Planning Committee would be to develop and maintain policies and procedures which would provide public accountability of educational programs on a fair and objective basis for all levels and types of post-secondary institutions.
3. Students, faculty, and administrators of individual institutions should have ample opportunities to determine local conditions and program content through whatever internal procedures necessary and to present their case for program change to the Academic Planning Committee of the Commission for Higher Education on an open and objective basis.
4. After the various institutions have presented their cases for program approval and budgeted public funds for programs, and after the allocation of funds is made by the Commission for Higher Education, then each institution should be allowed to determine for itself, internally, the best way of utilizing its total resources, including program priorities and program costs.

D. The heavy emphasis placed upon the utilization of existing post-secondary programs and existing institutions as the bases of a system for the coordination of post-secondary educational programs should not be interpreted as a neglect of new program planning or of a lack of concern for innovation. In truth, a coordinated system of diverse programs can provide the vehicles for the variety of widely discussed, innovative, alternate ways to deliver educational services. Easier access to professions, to degrees, to transfers, to credit by examination, to part-time matriculation, and to new career opportunities, is meaningless unless educational programs provide for such movement.

E. Serious consideration should be given to those citizens not presently availing themselves of post-secondary education. Extensive, in-depth efforts by the Commission for Higher Education to publicize the diverse educational opportunities presently available in Connecticut should be completed forthwith, along with organized efforts to determine the educational needs and interests of this group of citizens.

F. Program planning should strive for a fusion of both education and training, and develop programs on several levels which include general education plus specialized education plus specialized training. Internships, on-the-job experiences, work-study programs, field work, and independent study should be available concurrently with formal academic programs throughout the educational career of any student.

G. Closer tie-in among post-secondary education and the elementary and secondary schools should occur to enable more young people to fulfill their

maximum potential and to profit more directly from post-secondary educational opportunities available to them later. Program planning which includes this tie-in should result in a highly pluralistic and differentiated system of post-secondary education in which many more needs and levels of ability can be served.

H. There seems to be a feeling that educational costs must be curtailed, better management applied to existing resources, and unnecessary and unprofitable programs eliminated. Implementation of the nine recommendations contained in the report of Resource Group IV (Programs) may be one way through which these aims can be accomplished without sacrificing the educational needs of the citizens of Connecticut.

I. Programs should be accompanied by the policies and procedures which create flexibility and allow for the realization of such concepts as "continuing education." Shifting institutional emphasis from the old, patterned, lockstep progressions to continuing or life-long education, and increasing the role of the system for the coordination of post-secondary educational programs in offering many different types of programs in response to demonstrated needs, are major ways through which coordinated, statewide planning should change society's traditional view of post-secondary education as primarily for an elite group and lead to a parity of esteem or general social acceptance for all institutions.

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* Inclusion on this list does not necessarily indicate agreement with the findings and recommendations contained in this report.

II. Sub-Committee on Levels and Types of Programs

A. Levels and Types of Institutions

During the examination of the levels and types of programs currently offered at the post-secondary educational institutions in Connecticut, it became evident to this sub-committee that such programs are functionally synonymous with the level and type of institution at which they are offered.

Levels and types of educational programs are so dependent upon the characteristics of the institutions at which they are offered, that for purposes of discussion and analysis, these post-secondary institutions were organized into rather homogenous groups of institutions with significant similarities.

The inclusion of proprietary schools and hospital schools in this grouping list was to extend concerns to all of post-secondary education and not merely higher education and to recognize that there are almost one hundred such institutions in Connecticut. Of future significance is the fact that the 1972 Amendments to the Higher Education Act include provisions for the granting of federal funds to such institutions under appropriate conditions. Accordingly, therefore, the post-secondary institutions were arranged into the seven "units" referred to so frequently throughout the report of Resource Group IV (Programs).

The level of an institution is usually determined by the traditional length of time required by students to receive whatever highest terminal award (certificate, diploma, or degree) is granted by the institution. In defining type, many other variables are most often considered: governance (public or private), program emphasis (liberal arts or vocational), and primary nature of the student body (commuters or residents).

"Units" of Post-Secondary Education

Proprietary Schools

Definition - Private, profit-making schools for trade instruction and special occupational training certified by the State Board of Education.

Level - Award certificates only for completion of short-term and one or two-year programs. Do not grant degrees.

Type - Private, independently owned by individuals or corporations, with major program emphasis on specific occupational skills, and attended exclusively by commuters.

Findings - 1. Widely dispersed throughout the State, mostly in large cities.

2. Offer diverse types of occupational programs with the greatest number being in the business fields (accounting and secretarial) and the computer and data processing fields.

3. Lack of institutional rapport with other educational units causes some difficulty for students in transferring and in attempting to extend their education beyond the "certificate."

4. Credit by examination procedure at many degree-granting colleges in Connecticut may aid graduates of these proprietary schools in the pursuit of a degree.

5. Much discussion in other states regarding the possibility of degree-granting status for proprietary schools.

6. Representation on Academic Planning Committee of the Commission for Higher Education should aid coordination, inter-institutional rapport, and assure further study of status of proprietary schools in Connecticut.

Hospital Schools

Definition - Educational units of Connecticut health facilities offering basic health occupation education and training programs.

Level - Award certificates for short-term, one or two-year programs and diplomas for extended nursing programs. Do not grant degrees.

Type - Located throughout the State in both private and public hospitals primarily for the training of registered nurses and clinical technologists. Nurses in training most often in residence while students in other programs are primarily commuters.

Hospital Schools - Continued

Findings - 1. Some movement toward eventual phasing out of the diploma nursing programs which will be assimilated by degree-granting institutions.

2. Need for smooth articulation between degree-granting colleges and hospitals in regard to utilization of hospital facilities for the clinical component of particular degree programs. Coordination of such use should be aided by the Commission for Higher Education.

State Technical Colleges

Definition - Publicly-supported technical colleges to prepare those technicians for immediate employment in Connecticut industry who need up to two years of college-level instruction.

Level - Award certificates for short-term and one-year programs and terminal Associate Degrees for two-year programs.

Type - Public two-year colleges emphasizing technical education as related to industry attended almost exclusively by commuters.

Findings - 1. Recent (1967) evolution from institutes to colleges still causes some confusion about status of programs and raises problems for graduates.

2. Articulation agreement between Central Connecticut State College and Technical Colleges regarding student transfer into Bachelor of Science Degree Program in Industrial Technology is a step in the right direction.

3. Declining enrollments, lack of appropriate public image, restrictive nature of terminal Associate Degree, and rapidly changing manpower needs are areas of concern at present. Coordination of program planning by the Commission for Higher Education should be aimed at finding some solutions to these problems.

Regional Community Colleges

Definition - Publicly-supported two-year community colleges pre-supposing service to a region within commuting distance of their particular student clientele. Each of the institutions is expected to provide facilities to support instructional, cultural, and extra-curricular programs normally available in a comprehensive college of medium size.

Regional Community Colleges - Continued

Level - Award certificates for short-term and one-year programs and Associate Degrees for two-year programs.

Type - Public two-year colleges emphasizing a comprehensive set of offerings including three basic programs: transitional "pre-freshman" compensatory programs, terminal career-oriented programs, and transfer programs for those desiring degrees beyond the Associate level. Attended exclusively by commuters.

Findings - 1. Tremendous increase in number and variety of career-oriented programs since 1965.

2. Need for smoother articulation between two-year colleges and four-year colleges in order to expedite transfer of students.

3. The lack of coordination of program planning among two-year colleges and between two and four-year colleges and the need to develop closer rapport between technical colleges and community colleges should be studied further by the Commission for Higher Education.

State Colleges

Definition - Publicly-supported multi-purpose institutions of higher learning fulfilling four interrelated functions: professional education, liberal education, graduate study and research, and public service.

Level - Award five different degrees - Bachelor of Science, Bachelor of Arts, Master of Science, Master of Arts, and Sixth Year Professional Diploma in Education.

Type - Public comprehensive state colleges including four-year and graduate programs in most of the liberal arts, teacher education, and business administration; attended by approximately 70% commuters and 30% residents.

Findings - 1. Primary emphasis has been teacher education marked by recent efforts to initiate programs in other career fields. Phasing out two-year Associate Degree programs.

2. Have demonstrated great enrollment growth coupled with the recent introduction of a variety of new programs in the liberal arts, specialized fields of teacher education, and other career fields.

State Colleges - Continued

Findings - 3. Have made specific efforts to coordinate program planning through a State College Academic Planning Committee and other system-wide agencies.

4. Geographically widely dispersed, separate colleges serve as regional educational centers and further contribute to the entire state through their unique program offerings i.e. Central Connecticut State College - Industrial Education and Industrial Technology, and Southern Connecticut State College - Library Science.

University of Connecticut

Definition - "The" comprehensive public university in Connecticut with the exclusive responsibility for programs leading to doctoral degrees and post-baccalaureate professional degrees.

Level - Awards degrees from Bachelors through the Ph.D. in almost every academic and career field with the exception of theology.

Type - Public comprehensive state university emphasizing graduate programs while additionally providing undergraduate, pre-professional, first professional, and Master's Degree work consistent with its own particular responsibility for advanced graduate study. Primarily, programs are offered to resident students at the main campus at Storrs. The existence of five branches throughout the State and the Health Center in Farmington adds to the comprehensive nature of the programs and to their statewide impact.

Findings - 1. Geographic location of main campus appears to limit contacts between professional personnel at the University of Connecticut and other educational units.

2. Vitally important that the University of Connecticut contribute to any efforts to coordinate program planning in Connecticut since its program offerings cover such a wide range of fields.

Private Colleges and Universities

Definition - A group of twenty-three independent colleges as diverse as the society which created them.

Level - As a group, they award all degrees from Associate through the Doctorate in two-year, four-year, and graduate programs in almost every academic and career field.

Private Colleges and Universities - Continued

Type - Private, independently operated institutions, each with its own governing board; various sizes; different corporate or religious affiliations; programs tend to emphasize liberal arts on the undergraduate level with recent introductions of teacher education and other career-oriented programs; most students are residents with about one-half of their full-time undergraduates from out-of-state.

Findings - 1. Diversity of these institutions adds to the strength of the system for the coordination of post-secondary educational programs in Connecticut.

2. Many recent examples of cooperation between individual private and individual public colleges in exchange of students and sharing of programs.

3. More coordination of program planning among these institutions themselves and closer cooperation between the private and public sectors on a statewide basis would be of great benefit to all.

Summary Statement

The diverse nature of the Connecticut system for the coordination of post-secondary educational programs as made up of the foregoing seven "units" is such that it would be unrealistic and unsound to attempt to prescribe any set of programs by level and type of institution. Rather, viewing this diversity as a unique strength of the system, an important contribution of this sub-committee would be to recommend the establishment of appropriate advisory bodies to aid the exchange of accurate statistical information, the defining of mutually agreed upon institutional roles, the coordination of programs, and the smooth flow of students among the various levels and types of programs. In other words, we encourage the Master Plan effort and have contributed to the recommendations and answers provided in Sections One and Two of this report. In addition to that information, the following

remaining input is provided from the several study groups organized to address different general career fields and the liberal arts.

Members of Sub-Committee on Levels and Types of Programs

Co-Chairmen: Stanley Katz and Chandler Howard

Members:
Frederick Adams
Claire Berg
Robert J. Brunell
Thomas Connors
Rabbi Jerome Malino
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Special Consultants:
Larrie Dean
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B. Study Group Reports

1. Business, Technology, and Industry

This Study Group felt that the time available to prepare a report and to answer the questions in Section Two was so limited that there would be no opportunity to develop data for it through new surveys, such as the CBIA-RPI "Services to Industry Project." Instead, it was felt that this response had to be based upon already available data, surveys, publications, etc., and especially on the perceptions of the needs of business, technology, and industry by those who serve, study, or are otherwise associated with business, technology, and/or industry.

Hence, contacts were made with each regional planning agency in the State, and with the larger Chambers of Commerce, and with certain other business associations. Also, it was felt that heads of business and technology-oriented educational programs would more likely perceive these needs; so, they were the only

ones generally contacted at educational institutions. Finally, certain other groups and individuals appearing to have the potential for knowing the information we needed were also contacted.

Of all those contacted, very few responded. Those who did, are shown in the list of adjunct participants. So much of the hard information needed was simply not available even from those who did respond, and to a large extent, therefore, conclusions are based on perceptions of needs. In the final analysis, this may be the best way to do it anyway, if the right people are contacted. In any event, contributions to the answers to the specific questions in Section Two, while somewhat incomplete and preliminary, are at least an indication and a start. On the basis of this limited study, the following assumptions were made:

Business and industry dominate and will continue to dominate the economy of the State,[2] and must be adequately served by the educational resources of the State. According to footnote number one, the State's economy will continue to be based upon industry which offers high value-added and high absolute-value products and services which emphasize the continuing needs of the State to train the skilled personnel required by these industries.

Present long-term employment trends will continue in the near future[2] with manufacturing employment optimistically holding its own, and non-manufacturing employment continuing its steady rise. The increasing requirement for higher education and specialized training will continue to characterize the growing occupations,[2] mostly used by business and industry. Specifically, professional and technical, service, and clerical occupations are expected to grow the most in the near future.[2] A highly skilled work force must continue

to be the hallmark of the economy of the State.

Footnotes

1. "Issues and Opportunities in the State of Connecticut: 1970-2000" by Selwyn Enzer and Raul de Brigard. Institute for the Future Report R-8, March 1970.

2. "Our Manpower Future - Connecticut 1970-1985" by the Labor Education Center at the University of Connecticut (prepared by David Pinsky), 1970.

Members of Study Group on Business, Technology, and Industry

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* Inclusion on this list does not necessarily indicate agreement with the findings and recommendations contained in this report.

2. Teacher Education

The Study Group on Teacher Education was charged with the task of developing a reply to the question, "Whither Connecticut teacher education in the remainder of the '70's and the decade of the '80's?" Its first objective was to amass population projections from plans developed by Connecticut colleges and universities having teacher-training programs; a second objective was the discovery of future innovations which would alter the emphases and design of current curricula.

To elicit the primary information and to sample the philosophies of those institutional administrators charged with the development of academic projections, the Study Group developed a brief questionnaire. Forwarded to sixteen institutions and to several individuals authoritatively connected to teacher-training efforts, the questionnaire also requested speculations on the "iffy" topics related to future teacher preparation plans: performance evaluation techniques, changes in certification requirements, and program sharing with other institutions.

Although the making of academic projections is undoubtedly more an art than a science, and despite its assumption concerning the use of demographic information, the Study Group was surprised to discover the extent to which the art took precedence over the science. Less than 20% of the institutions surveyed indicated that their processes built upon a common foundation of demographic material which was then modified by reference to occupational information for the State; to national projections; to weights dictated by economic conditions, the socio-economic status of the prospective clients, and the financial resources of the institution; and to the grey area labelled "experience."

It may be that no workable formula which will fit both publicly-supported and independent colleges can be developed. But until a common base is used by all teacher-training institutions, projections of the type requested by the Study Group are basically noncomparable; and extrapolations from them are fraught with peril, if not truly impossible.

Moreover, institutions are not in the habit of making projections for more than a few years at a time, whatever the statistical foundation used. This lack of expertise, coupled with the state of flux in which state and federal financing plans find themselves, uncertainties as to the economic future of the nation and state, and the possibilities for future technological advances which will affect teaching practice, make the projections for the decade of the '80's extremely tentative.

Nonetheless, despite the essential noncomparability of the data received and unreliable nature of the predictions for the period 1980-1990, some general observations may be made.

a. All institutions with elementary programs predicted a drop in both undergraduate and graduate programs before 1975, but estimates of the quantity of the decline varied considerably. All but one projection suggested an upward trend would reimpose itself by 1975, and that enrollments would plateau for the next decade and a half.

b. The almost general optimism surrounding elementary programs was also expressed concerning secondary programs.

c. The projections received reveal greatest optimism in estimates for more specialized degrees, especially graduate, which show increases ranging from 12% to 25% in those institutions which are not controlling upper limits of growth in teacher-training programs. These estimates - touching upon such special areas as early childhood education, counselling and guidance, educational psychology, administration and supervision, and reading development - are areas of possible growth.

d. Despite the data's suggestions (1) that the decline in elementary training will be abrupt and then be followed by a rise in enrollments and a leveling off and (2) that this decline will be partially offset by an increase in enrollments in areas of specialization, the incomparability of most of the data suggests that the estimates given should not be taken without serious questions and further study.

e. Most respondents indicated that the concept of a performance evaluation has merit, but all found fault with the plan currently under public discussion. In addition to criticisms of the plan's expense, its proneness to political interference and personality clashes, and its administrative

complexity, severe criticism was made concerning the harm it would cause to children whose teachers were frequently absent because of evaluation duties. Most respondents suggested a slower-paced implementation and further study, especially of the serious reservations made by institutions of higher education, professional organizations, superintendents, teachers, and parents.

Because all respondents were convinced that the current plan will not be immediately implemented, most institutions had not projected immediate changes to their undergraduate and graduate programs, including the post-BS 30-hour programs. All institutions with graduate programs, however, indicated their interest in training evaluators through courses, workshops, and institutes; in addition, one institution has indicated that it plans to contract the services of its faculty of education as evaluators.

f. None of the respondents ventured to predict the quantitative effect of the changes in the elementary and secondary schools regarding teaching procedures on undergraduate and graduate populations, but most agreed that the greatest quantitative effect would be felt upon the graduate level. Two trends seemed to be emphasized: the movement toward greater professional specialization (the retraining of generalists, an increased demand for special courses involving retraining or advanced professional skill, an increase in special education demands, the need for greater subject-matter preparation for the handling of individualized and independent study programs, the development of a pre-kindergarten level) and the recognition that consortium arrangements may hold possibilities. These trends, the Study Group feels,

reinforce the recommendations made concerning effective means to achieve qualitative advances in Connecticut teacher education.

g. Figures for degrees in elementary education conferred in Connecticut from 1968 through 1972 do not suggest that the students have been made adequately aware of either the declining market for elementary teachers or the increasing demand for specializations. Add to those deficiencies, other shortages and underproduction of specialists in reading, bilingual education, physics, chemistry, general science, journalism, speech and dramatic arts, business education, and school services (nurse, psychologist, social worker), and one concludes that counselling services are in need of tremendous improvement.

h. Most respondents noted that inter-institutional consultation is sporadic and informal; the exchange of information has little or no effect upon projections. Several institutions located in urban centers have reported inquiries concerning shared programs; however, since no machinery exists for developing these into formal proposals, the institutions - despite a frequently expressed willingness for greater cooperation and mutual planning - have made very little progress toward consortia in teacher-training programs.

The efforts of individual institutions to prepare high quality teachers for the schools of Connecticut are commendable and have contributed greatly to the quality of life for all citizens. The following recommendations are offered as a means of aiding these institutions in their continuing desire to improve their programs.

a. In order to permit a true comparability of projection figures, the Study Group recommends the development of a set of uniformly developed and uniformly reported projections which have as a common element their generation from demographic figures gained from either HEW or the Census Bureau. Each set of projections should describe the qualifications of the demographic data made by other statistics (occupational information, economic data, and so on) and the approximate effect each qualification has upon the raw data. Because this practice may lead to the development of a basic formular approach useful to all institutions, the projections should be reported in terms of one category only (say, majors and candidates). They should also be maintained on a two-facet basis: in terms of actual and estimated annual figures and actual and estimated five year figures.

The Study Group feels that this information lays the foundation for a data bank useful to all teacher-training institutions not only for projections, but also for inter-institutional planning of other types. If the data bank were maintained by the Commission for Higher Education, the current status and future plans of Connecticut teacher-training programs would be readily available for inspection by the public and for consultation by the institutions.

b. Although the effective date of Connecticut's change in evaluation and certification criteria cannot be predicted, its nature can be guessed: greater stress will be placed upon the quality of the teachers' preparation, performance, and productivity.

The pending change offers to teacher-training institutions two challenges. First, preparation of evaluators which has already been accepted; and second,

improvement in quality of those being trained.

The Study Group recommends consideration of the following:

(1) The raising of requirements for admission to teacher-training programs, both undergraduate and graduate;

(2) The training of both undergraduate and graduate students in the techniques of peer evaluation and the experience of being so evaluated.

c. Attempts to discuss, plan, and implement trends toward greater professional specialization and increased consortium arrangements as parts of a concerted effort to raise the standards of training and performance within the profession should be encouraged.

d. The Commission for Higher Education should assume a leadership role in bringing to the attention of the teacher-training institutions the fact that their counselling efforts are not succeeding in motivating their students toward those specific areas of teaching where there are manpower needs.

The Study Group recommends the development of a "data bank" for the purposes of inter-institutional consultation beyond the purpose of academic projections; for cooperation in the development of shared programs. The development of a "data bank" offers to the Commission for Higher Education an additional opportunity to develop formal inter-institutional cooperation, especially among colleges and universities in urban centers, along with branches of ACES (Area Cooperative Educational System) and ECI. Analyses of demographic data, compilations of socio-economic needs, and, in addition, cross-indexed accounts of institutional resources (both in terms of faculty specialties and student needs) might permit

institutions to cooperate formally in developing shared degree programs (both first and graduate), especially in such "special" areas as bilingual education, adult education, the training of the handicapped, and so on. Students would be more readily able to develop individualized programs, especially those on the graduate level designed to fill gaps in the student's stock of information or to improve the quality of his performance. Moreover, on the level of continuing education, the cooperating institutions could more readily follow the model of the legal, medical, and dental professions by offering mini-courses so that teachers could keep up-to-date and continually refresh and improve the quality of their practice. Not only would such a "data bank" lay a foundation for shared degree programs, permit greater individualization, and allow a more flexible (and faster!) response to the highly specialized needs of practicing teachers, but it might also make possible a truly diagnostic evaluation procedure and engender a truly professional attitude toward continuing education.

Members of Study Group on Teacher Education

Study Group Leader: Howard Zettler

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List of Institutions Providing Data for Survey:

Albertus Magnus College
Annhurst College
Central Connecticut State College
Connecticut College
Eastern Connecticut State College
Fairfield University
Sacred Heart University
St. Joseph College
Southern Connecticut State College
Trinity College
University of Connecticut
Western Connecticut State College

3. Criminal Administration and Social Services

Emphasis has been placed on the criminal justice aspect of this report. This is not intentional, but arises from the fact that criminal justice education is still in a developmental stage whereas social services has been in a staid position for many years.

In social service education, however, the community colleges are being directed by the needs of the service in social work that is increasingly subject to changing delivery systems. These systems are seeking to develop team operations extending from the indigenous worker through the Ph. D. level. What is particularly needed in this area is the coordination of older established programs so that the practitioners can have a genuine career ladder. The programs at all levels should be integrated to a degree that maintains academic integrity and allows for the greatest utilization of manpower to deliver social services.

In the preparation of a Master Plan for the state of Connecticut, an urgent need exists in the area of criminal justice and social services for the coordination of efforts and definition of roles of traditional disciplinary education and the application of the disciplines to career programs.

The second concern is that of the maintenance of relevancy found in new trends of education administration to identify itself as a "certifying agency" in alternative educational patterns. Many of the patterns seek to substitute life experiences other than the teacher-student experience as a basis for awarding credentials. Great care must be exercised and great haste must be avoided in the acceptance of purely experiential learning in a career as a measure of expertise in the human services.

The reason for caution finds its validity in that experiential learning that is concerned only with individual fulfillment has minimal affect on the community, while experiential learning concerned with the delivery of services of a vital nature can have either a constructive or deleterious effect on many people and hence, must be subject to intense scrutiny. In such instances, a definite role exists for governmental regulatory agencies, including educational institutions, to safeguard the good and welfare of the people.

The outputs of education in the human services education, then, are two-fold; one, the accruals for the student himself; and two, the results of the student's actions on the environment where his education is expected to make a major output. In human services, regardless of the area, the practitioner, whether in the courts, police and/or law enforcement, correctional services, social welfare, mental health services, or allied fields, becomes an element of the environment that has a direct bearing on a major aspect of the life of his fellow man. This being the case, then the Commission on Higher Education should consider not only its services to the students, but to its effect on the social structure and the quality of life in the state of Connecticut.

When the criminal justice system is viewed from the foregoing perspective, the issue of coordination and relevancy becomes paramount.

The 1967 Task Force Reports of the President's Commission on Law Enforcement and Administration of Justice have more than adequately identified this need for development and coordination. The reports have indicated that the problems in the most credentialed area - the courts - are not too much different than those of the least credentialed areas - the police and corrections.

These reports support strongly the importance of educational efforts in the state of Connecticut towards a systematized structure for Criminal Justice as a cluster in career education. Through the efforts of the Connecticut Association of Police Educators and the Connecticut Probation and Parole Association, a fairly comprehensive correlation with educational needs in the areas of law enforcement and corrections services has been maintained. Educators in these areas have been in regular communication with the operations agencies such as the Municipal Police Training Council, individual police agencies, probation and parole services and the corrections services of the state. On the other hand, contact with the courts has been limited because of the preeminence of the professional nature of the court system and the system of professional legal education that is self-policed. The needs for the courts, however, can be deduced from contact with citizen groups interested in the courts and the review of publications such as the Connecticut Bar Journal of December, 1970. In that particular issue, the entire contents were devoted to a symposium on judicial selection and reform.

In order to fulfill the needs of criminal justice, the needs must be treated in a systematic way and the first prerequisite for structuring such a system would be the creation of an "umbrella" under which every element of the system can benefit from the awareness of the needs of every other element of the system. To do this, the Master Plan should encourage a multi-interdisciplinary advisory body that would not only coordinate a cohesive, integrated plan for the education of students who would follow a career in the administration of justice, but would further examine the role and contribution of pre-secondary education to post-secondary education in the administration of justice.

In the context of coordinating for social service educational needs, the greatest lurking danger is a pre-conceived notion of social service because there is basically no facet of life in the state of Connecticut that cannot, in some manner, be related to a social welfare need.

Coupled with this idea is the constant state of flux in social welfare administration brought on by changing economic conditions, changing perceptions of welfare need, the need for greater efficiency in delivering social services, and the public demand for greater accountability.

The growth of "professional" specialists for many years has tended to focus on a concentrated continuum of educational development that has not kept pace with the growth of social demands as witnessed by the problems faced in the delivery of medical services, the administration of justice, and social services.

Presently, the state of Connecticut is contemplating the creation of an "umbrella" agency, the Department of Human Services. The creation of such an agency will create a tremendous force for educational services; personnel and staff development; accountability services; teachers and trainers (both for employees and service recipients); social service practitioners and auxiliary personnel. The services needed in a reorganization of this kind will generate a demand for in-service educational efforts, the delineation of new titles which will generate need for different curricula design for the accommodation of new systems deliveries.

In the contemplation of new systems deliveries, one example will suffice to demonstrate a need for comprehensive and coordinated educational planning, the concept of neighborhood child and youth services. It is contemplated that to care adequately for children and youth with non-conforming behavior, neighborhood

teams consisting of personnel running the gamut from Ph. D.'s to unlettered indigenous workers will be needed to carry out effectively the plan. In addition to meeting the demands for new classes of workers with new educational needs, the personnel reassigned to such duties will be in need of refresher and reorientation courses.

From the professional aspect, Professor Wyatt Jones, Brandeis University, envisions the culmination of educational efforts on the part of a social worker to be a doctorate at the end of thirty years during which time the candidate would have followed an integrated work and study program that could produce the top-drawer professional with an education that was current with present needs.

As resources become more limited and the demand for services increases, the need for a full pattern of education that permits a career ladder concept with a propensity for lateral movement at different levels ranging from indigenous, secondary, post-secondary, community college, baccalaureate, post-graduate, and doctoral levels must be constructed. This kind of pattern will demand tremendous planning from the purveyors of social service education. Any Master Plan should make efforts to provide a mechanism to encourage coordination and cooperation of an advanced nature.

In the state of Maryland, a system has been instituted called "2 plus 2 plus 2." Under this system described by Robert Vivader, M. D., associate degrees, bachelor degrees, and graduate curricula have been articulated for the benefit of the practitioner. The system utilizes the state community colleges, the state university, and private institutions such as John Hopkins. Under the system, candidates for the top job emanate from the broadest base of the community

college and can realistically look to a truly professional status as the ultimate of their careers. The system has worked in moving people from their low socio-economic status to a higher level where their empathetic life experience and new status permits them to be more effective with their clients.

Planning for an educational structure of this kind will require the implementation of an advisory body on a multi-institutional basis that will consist of educators, administrators, students, and clients. The latter will be included not only for valuable input, but to conform with demands of national agencies such as the Model Cities program of HUD that direct community participation.

In structuring education for the human services area and keeping the need of a career system in mind whereby students are encouraged to obtain some skills and sample the work world before returning to the academic side, the concept of the "inverted major" should be incorporated. Under this system, community college programs will continue to provide skills for employment plus a base for further expansion. Such curriculum patterns project education that is 1/3 general, 1/3 generic, and 1/3 specialized. Curricula beyond the community college level should then be available to reinforce the community college and allow for channels that best suit the student. For instance, community college programs in law enforcement, allow students to continue into areas of sociology, psychology, administration, or forensic science.

Credentials in the human services should not be static. The demands of services are a current reality and practitioners who have degrees that are more than a decade old and who have not up-graded their degrees within the decade should be encouraged through seminars, continuing education, "renewing

degrees" and other devices to up-grade their competencies.

Emphasizing the need for "current credentials," Charles Guzzeta of the Hunter School of Social Work, has stated:

> "Consideration for the prevailing social situation may be dismissed by some people as a cop-out... However, every school exists within a social context with which it is in harmony or at odds. Schools need not timidly reflect current style. But neither is a school an island. A clear example of the price of failure to consider the implications of social situations is the present revolt of county welfare commissioners... Much of the disenchantment has come from the failure of school curricula in the nation and the conflicting constituencies with whom county welfare commissioners must deal... In order to succeed in its goal, whatever it is, and in its curriculum which is the means for achieving the goal, a school must have a solid base of social support."

Members of Study Group on Criminal Administration and Social Services

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Adjunct Participants:*

Early in November, 1972, approximately thirty letters of survey were mailed to people who are knowledgeable about the needs of criminal administration and social service education. The following list comprises those persons who answered the survey in time for the compilation of this report.

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* Inclusion in this list does not necessarily indicate agreement with the findings and recommendations contained in this report.

4. Health Professions

The health manpower crisis, per se, is not currently the priority crisis we face in the projected health education program needs in the State of Connecticut. The most relevant challenge we face is to define, in an action sense, the three C's, Coordination, Collaboration, and Cooperation, from a central base of responsibility, i.e., Commission for Higher Education (CHE). To be relevant, the aforementioned definitions must relate to the determination of philosophical goals, the identification of resources, both in Connecticut and neighboring states, and the implementation of a definitive program design and strategy, with peer review panels to determine impact related to philosophical goals.

In order to work toward a rational solution to the system of proliferation of health education programs and counter-productive preparation of health practitioners, we deem it necessary to approach this "crisis" for maximum impact from a legislative process mandating the Commission for Higher Education to be responsible for a new direction projected toward 1979.

Widespread concern about the changes in our health care system has led to many studies and surveys. Some of these inquiries have examined health care and related educational problems at the national level, and some have focused on particular states and metropolitan areas. Although many of these studies have tried to predict the number and kinds of health care personnel needed, no coordinated recommendations concerning number and kinds of training facilities have been developed either for the nation or for the state of Connecticut.

a. Relationship Between Education and Practice

The complexity of education in the health fields requires that the Commission for Higher Education include in its Master Plan for Higher Education a plan for the health professions. A survey of education in the health fields necessitates consideration not only of the educational system, but also of the health care delivery system in which and for which the health care personnel are to be prepared. This consideration accounts for the basic complexity of education in this area.

But very clearly the thing that is true about health manpower education that is not true about other fields of education is the inordinate complexity and interlocking between the area of practice and the area of training. In general, engineering education, legal education, and other professional education outside of the health fields do not have this degree of interlocking. A significant part of health manpower education is carried out within the purview of the practice of the profession itself.

The implication of our study is that as the system of health care changes, so must the personnel required for the optimal effectiveness and efficiency of the system be changed. The education and training of these health personnel should similarly reflect such change; and, indeed for optimal efficiency and effectiveness, the training system itself must change. Therefore, the immediate necessities for the solution of immediate problems were considered, and it is hoped that the proposals that were broadly drawn are sufficient to provide for a transition toward the long-term goals which can be more gradually developed. A brief section which discusses some possible changes in

the health care system itself, as well as new roles in health care that may be developed, has been included. However, such changes and such new personnel will contribute to but will not solve the present acute problems and are presented for future consideration and development.

b. Summary of Major Features of Health Professions Educational Programs in Connecticut

(1) Objectives:

Reappraisals of health care and educational needs are currently being made on both the national and local levels. This study is an effort to make that reappraisal for Connecticut. Many of the health problems of Connecticut, though similar to those in the rest of the nation, can be solved only within the State and only by concerted action of its public officials and other civic and professional leaders. On the basis of its investigations, the study group has recommended major changes in health care education. The study may include recommendations, if adopted, which will require new State legislation and new public expenditures. They may require additional buildings and equipment, additional teachers, and changes in working relationships among the educational institutions, centers of medical treatment, and other public and private resources for health care.

It is our intent to take cognizance of existing strengths and resources of various institutions throughout the State whenever and wherever possible and to recommend their use in meeting changing needs of health education within the system for the coordination of post-secondary educational programs in Connecticut. These include:

(a) Preservation of diversity.

(b) Promotion of flexibility and adaptability.

(c) Financial prudence.

The principal aim of this report, therefore, is to offer guidelines for unifying the State health education potential by bridging existing gaps between public and private institutions, by reexamining conventional breaks in various curricula, by narrowing separations between university and community resources, and by broadening the geographic base of health careers education within Connecticut.

Because of the complexity of the problem, no simple series of recommendations is possible. In spite of their seeming complexities, the multiple programs proposed should allow maximum utilization of existing manpower and facilities, hence, more efficient use of public funds, including those available through various Federal sources. Such programs should also provide for a rapid expansion of services in communities in which programs of sufficient quality to support education are developed.

Data collected and evaluated during this study are included in an abbreviated form only. A more complete compilation of all data should be undertaken during the coming year with careful review and evaluation. Decisions can best be made when complete up-to-date data is available.

(2) Features Recommended:

The recommendations are directed to two major purposes. The first is to make proposals sufficiently concrete to encourage prompt initiation of solutions for several of the State's acute problems. The second is to

make proposals for approaching and resolving problems on a long-range basis. In the latter case, it is clear that many of the recommendations, which are intended to serve as guidelines for the future, will need to be reviewed and updated periodically.

The report recognizes the need for educated personnel in all the health fields in the state of Connecticut and the great need for the development of new kinds of roles for health care personnel and new types of approaches to the health care system. In addition, it recognizes the increasing alliance between the public and private sectors of health care and education, both in the location and support of these activities.

Based on these facts, the report recommends that State funds be appropriated for the coordination and strengthening of existing programs and for the development of new programs in education in the health fields, both in private and public institutions. These new programs would include those following the accepted mode of education, those training the same types of personnel but in new and different ways, and those training new types of personnel in new ways. The amalgamation of the public and private sectors will increase production of needed personnel in the State in the most effective fashion. Such utilization of existing clinical facilities throughout the State will be far less costly than the development of new schools or institutions.

The report further urges that new approaches to curricula be made in all the health fields. Review and innovation are imperative in all areas. New curricula should be encouraged in both the private and public sectors and should emphasize multiple locations and types of experiences.

Emphasis must be placed on the need to teach requisite courses in the location where they can be most effectively taught. In addition, increased affiliation between private and public sectors throughout the State will encourage much needed greater collaboration between the areas of practice and education, leading to a fuller exploration of the community as an academic resource.

The report strongly urges an increase of health educational opportunities for citizens of Connecticut and urges expansion of scholarship and loan funds to make the opportunities realities.

Research in health care and, also, health care education is encouraged.

It is further suggested that there needs to be improved use of the communications-library system for health care information which not only can enhance research in health, but also can lead to improvements in the health care system.

A key recommendation of this report seeks to establish a permanent advisory body appointed by the Commission of Higher Education for the proper mobilization and long-range coordination of the widely diverse resources of the State for education in the health fields. It would function to aid the Commission for Higher Education to implement the recommendations of this report, to review programs, to continue to aid in planning and development, and to stimulate such planning and development.

Some of these recommendations will require shifts in location and organization of existing programs. A few will require construction of

new facilities. But the administrative and bricks-and-mortar recommendations should not distract public attention from the need for changes in the methods of health care education. All of these changes are needed to solve today's acute problems and to give the health education system of Connecticut the adaptability it requires in order to keep pace with the continuing changes in health needs that lie ahead.

(3) Summary Statement:

The review of the determinants discussed has convinced us that there is need of a fresh approach to education in the health fields. This will require not only the development of a new system of affiliations and a new system of financing existing institutions, but also a new approach to the basic core of education, particularly in medicine. Emphasis must be placed on the openness and flexibility of the new system of health education and on the broad involvement of many institutions throughout the State. This would include both private and public institutions that have the facilities, the desire, and the commitment necessary to be involved in health education. There must be assurance of quality by augmentation of the trend of returning certain major basic disciplines to the university setting, while at the same time, broadening the base of clinical training by better utilization of existing staffs and service facilities. The concept of a clinical center as an institution or group of affiliated institutions which serve health care needs at a number of different levels must be further developed and refined.

c. An Advisory Body for the Health Professions Educational Programs

(1) The Need:

There exists a need for mobilizing and coordinating the widely diverse resources (public and private institutions, universities, colleges, junior colleges, clinics, hospitals, etc.) within the State toward the production of health care manpower. Such coordination in the health fields is not now easily accomplished under the Commission for Higher Education. A coordinating body is needed by the State to deal specifically with the multifaceted and diffuse problems of education in the health fields. It is particularly needed to provide a mechanism for the review, revision, and continuing evaluation of the multiple programs being initiated.

In spite of the fact that a number of professional groups have gathered data for some time, no one has currently made an effective effort by which sound educational planning and coordination, based on the studies they have made, can be accomplished. Although health care coordination appears to be receiving attention in the recent Federal legislation for Comprehensive Health Planning, few efforts have been made toward coordinating the education of health care personnel. A formally constituted body is required for this purpose. This body must be able to respond promptly to changes.

(2) Personnel:

Appropriate staff with an adequate operational budget should be obtained. Necessary technical advisory committees should be appointed and should be composed of people both inside and outside health care and health care education systems. They should be capable of dealing with the special

health education aspects of problems such as libraries, communications, and data storage and retrieval systems, as well as the more traditional aspects of health education.

(3) Functions:

Program review and coordination - The advisory body should make appropriate recommendations to the Commission for Higher Education based not only upon the review of programs under way, but also upon all other aspects of education in the health fields which, in the judgment of the advisory body, appear to require action. In addition, it should encourage and aid in the further development of long-range programs in addition to those which apply primarily to meeting the State's immediate needs. These long-range programs should include, but are not limited to:

(a) assistance in the development of a communication-library network for information storage and retrieval, linked to both public and private institutions,

(b) encouragement and support of research in health care delivery systems, this research to be carried out by appropriate public or private institutions,

(c) encouragement of programs in education about health care and health care systems at the grammar and secondary school levels, and

(d) encouragement and support for a viable continuing education program throughout the State.

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5. Environmental Concerns

There is a growing interest in environmental concerns on the part of the citizenry of Connecticut. This grows out of the current national and international attention being given to environmental problems. It is generally recognized that our environmental resources are limited and that we cannot continue to squander them as we have in the past.

Reflecting this interest in environmental matters, a number of institutions have proposed or already implemented courses and full-fledged academic programs dealing with the environment. More needs to be done to meet both student desires and societal needs. Nonetheless, it is important at this stage to introduce some restraints and quality control so that a proliferation of programs of uneven caliber can be avoided. Connecticut suffers, at present, from a shortage of trained environmental personnel. In addition, our environmental training programs are handicapped by limited financial support. Biological training is especially hampered by the shortage of appropriate environmental "laboratories" -- natural areas where the ecosystem can be studied.

The Study Group was unable to stay within the guidelines provided by the Resource Group that programs be defined as courses of study leading to certification, since much of environmental education should be integrated into other programs. There are two, somewhat different, aspects to academic environmental programs. The older, well established programs such as those which train sewage treatment plant operators, game wardens, and even college professors of plant or animal ecology, predate the current burgeoning of this field. The skills which practitioners require are well established, and the current

popularity of the environment should not be allowed to subvert such technical programs into superficial, "jack-of-all-trades" type programs (although many technical programs would benefit from the introduction of greater breadth). On the other hand, there is a great and growing need for broadly trained environmentalists who are capable of instituting and implementing policy in this increasingly complex area. Such persons must be "jack-of-all-trades." They must be conversant with the fields of law, engineering, economics, etc., as well as with the natural, physical, and social sciences. Training programs for this new breed of environmentalist are developing. They are interdepartmental and interdisciplinary in nature and should not be strait-jacketed by the requirements of the older, better defined programs.

Environmental education is crucial and should be included within traditional disciplines in addition to an interdisciplinary approach. It is important that all citizens be environmentally literate.

Additional needs noted by this Study Group are:

a. The need to change the faculty reward system so that persons are encouraged, rather than discouraged, to pursue innovative, interdisciplinary, interdepartmental, and service-oriented interest, without peril to their academic standing. The problem is obvious, and its solution depends upon changing the attitudes and values of the decision makers.

b. The need for a balance of basic and applied research to back up the problem-oriented teaching.

c. The need for funding of modest, grass roots, environmental research efforts to collect information and for educational purposes. At present, there is a need for this kind of research, but little funds are available. The Department of Environmental Protection has, in the past, asked some institutions to participate but on a volunteer basis.

d. The need for a liaison body for higher education in the State. This was one of the strongest points to come out of Study Group discussions. An Environmental Education Authority, independent of existing agencies, should be established to coordinate and encourage efforts in this area. It was felt that all existing State agencies had mandates which, in one way or another, were too limited or had a different mission. An Environmental Education Authority could, or should (among other things):

(1) Be associated with, but be independent of, the Department of Environmental Protection, the Commission for Higher Education, the Department of Education, etc.

(2) Actively seek federal funds currently available for environmental studies, community projects and institutional projects under the Environmental Education Act.

(3) Encourage and coordinate the sharing of facilities, faculties, public television channels, and alternative means of instruction.

(4) Conduct specialized general interest and postgraduate training programs as required by the State.

(5) Conduct surveys of resources and needs of the State, as required for planning purposes.

(6) Review academic programs on the environment.

(7) Administer an Environmental Extension Service, to aid in the general education of the citizenry as well as providing a free or low cost consultant service to local Town Councils, Planning Commissions, etc.

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6. The Future of the Liberal Arts

There is no better place to begin this short report on the Future of the Liberal Arts than with this quotation, dating back to 1917, from Alfred North Whitehead:

> "The curse that has been laid on humanity, in fable and in fact, is that by the sweat of its brow shall it live. But reason and moral intuition have seen in this curse the foundation for advance. The early Benedictine monks rejoiced in their labours because they conceived themselves as thereby made fellow-workers with Christ.
>
> "Stripped of its theological trappings, the essential idea remains, that work should be transfused with intellectual and moral vision and, thereby, turned into a job, triumphing over its weariness and its pain. Each of us will restate this abstract formulation in a more concrete shape in accordance with his private outlook. State it how you like, so long as you do not lose the main point in your details. However you phrase it, it remains the sole real hope of toiling humanity; ..."

We see, and we assume that others share our vision, the liberal arts as that broad range of knowledge and intellectual activity which spans the fields of science, mathematics, social science, philosophy, humanities and the arts. We see them as basic to the discovery and use of all other kinds of knowledge, and to the ways in which men make the work which each must do as useful and pleasurable as possible.

If these assumptions are acceptable, and if it can also be assumed that the State is interested in the needs of citizens to earn their living (to work) and to achieve measures of "intellectual and moral vision," then it is possible to speak of other assumptions already made in connection with their bearing on the Master Plan and the future of the liberal arts.

Interestingly enough, those very assumptions could not have been made without reliance upon the kinds of knowledge and intellectual processes which are part of the liberal arts scheme. The assumptions are more than mere guesses about our future. They are informed suppositions which could not be set forth without a sophisticated capacity to discover and to use knowledge from modern science and technology, from the social sciences and the humanities--from fields, in short, which comprise much of what we call "the liberal arts."

a. Assumptions about the Future

(1) The "future assumption" of "fast change" requires that not merely a small elite, but also a substantial proportion of the population have wide and continuing access to civilizing knowledge, i.e. to knowledge that enables men to live well together, to respect the material and cultural needs of others, and to order priorities of choice. Change occurs so rapidly that adaptation to change will cause human suffering and dislocation even as it creates benefits. The need for high quality educational opportunity in the humanities and social sciences will intensify. These fields bring the invaluable news of human experience from many times and places to bear upon the current moment and upon the future. If major elements among us cannot avail themselves of continuous opportunity for learning in these fields and for developing the skills required to advance that learning, then the result can only be disruptive to individuals and to the social order itself.

(2) The "future assumption" of "relatively less employment in goods production, more in services, government" will develop greater public demand for and interest in learning in the social sciences and arts. Until the transfer of work from production to services is stabilized, special emphases will be necessary in those fields which enable individuals to re-learn and to learn anew, and which enable others in private and public enterprises to come to decisions on the development of activities which are morally and socially beneficial, and which can be planned for and implemented with economy and with minimal social disruption and human cost. In short, there will be greater need for general education among the populace at large and greater need for specialization in certain fields so that the leaders in society will be capable of judgment that is both creative, practical, and economical.

(3) Two "future assumptions," "characteristically more complex interdisciplinary work," and "internationalization and more important emphasis upon Pacific Basin Area," touch upon the same crucial center. The distinctions between areas of knowledge are arbitrary, and however necessary at the beginning of general education, these distinctions evaporate as the educational process advances and as the outcomes of education are utilized. The scientific spectrum of the liberal arts

provides the detailed specifics of investigatory objectives and processes which will require special and continuing support. Without that support, undergraduate education in the sciences, advanced study and research will themselves not be of sufficient quality to carry the heavy demand which will not only be made by our sciences upon one another, but also which will be made upon all sciences by the wide range of "consumers" who increasingly are dependent upon scientific knowledge to serve the myriad needs (not the least of which are the needs to conserve the environment and to use technology beneficially) of civilization as it advances here and elsewhere in the world.

The same support required by the international languages of the sciences will also be needed by those fields of the liberal arts in which man discovers, examines knowledge, and imparts it to others in useful forms. If communication among men is to improve, if men are to understand their own roles more fully, and if they are to appreciate their relation to other peoples now unknown (even when those peoples live among them), then there must be well developed opportunities in all levels of the educational scheme for teaching, learning, and experience in such fields, among others, as history, languages, literatures, linguistics, anthropology, philosophy, religion, and political science. If internationalization of interests is achieved, it will be achieved primarily through understanding and knowledge developed

out of the liberal arts foundation. That foundation needs and will continue to need for some time infusions of both money and talent if it is to overcome present provincialism and meet the requirements of "internationalization" even in its simplest forms.

(4) The "future assumption" that "values are in flux -- yet we must have values to operate" is, in effect, one special and significant aspect of the preceding assumptions. Values are a product of socialization, and the purpose of the liberal arts, that which gave it utility when it was understood as those bodies of knowledge defined by the trivium and the quadrivium and that which still give it purpose, is socialization -- the equipping of men for the participation in the community of other men. It is folly to believe that the educational system can, however well supported, wisely expanded, and practically planned, counterbalance or overcome the forces which in our present age desocialize and dehumanize. All other institutions, and all other private and public "systems" in which we participate will, if socialization is to progress, assume responsibility with the educational system for its advance. Again, however, the liberal arts constitutes the fullest reservoir of knowledge and of skills necessary if, together with other "systems," the educational system is to promote socialization.

Values must always be in flux; they are the basis of the reward and punishment systems by which man controls himself and others in

the community. The question at any given time is, "What values shall be taught widely and in a practical way?" The liberal arts, seen as a broad field of knowledge and as a multitude of activities related to knowledge, cannot supply the answer, but perhaps those whose lives are informed by fragments of that knowledge and who are educated to consider questions involving values, will come to common agreements.

(5) Two more "future assumptions," "rely more on parents for rearing new generations," and "increased leisure and travel," can be collapsed into one consideration: the quality of our civilization. Informed and civilized parents, parents who are active, benign participants in human affairs, are likely to rear children who are similar. The opposite is also true. When we contemplate increased leisure time for increasing quantities of people, we can see individuals allocating it essentially in one of three ways:

(a) To activity on behalf of society;

(b) Passively; and

(c) To activity which is antisocial.

The educational system, using especially the fields within the liberal arts which deal with man in society, may well be the ground on which questions relating to these concerns are already well formulated. The educational system will devote more attention to these special questions at all levels, but, again, it will do so in conjunction with other institutions if the impacts desired are effectively implemented.

b. Conclusions suggested by these "Future Assumptions" are:

(1) That the liberal arts will continue to be essential to all kinds of education and training if that education and training are to be formed in ways which make them individually and socially useful.

(2) That the vitality and progress of nearly all other human institutions in our kind of civilization are dependent upon the vitality of the liberal arts, and upon the capacities of all educational and training institutions not only to equip students for a wide range of social and individual purposes, but also to conserve, evaluate, and produce knowledge.

(3) That increasingly other institutions, both private and public, must, in cooperation with the educational system, become involved in educational and training efforts which are not only directed to immediate interests, but also to fundamental socializing objectives. If left to the formal educational system alone, such efforts will be insufficient to meet the needs of a society which is not only immensely complex, but also which, as its complexity increases, is subject to forces which desocialize and dehumanize.

c. Summary Statement

Finally, this special note: the ultimate key to education is the person who is both teacher and scholar. Even where there is no knowledge, no book, but only people with the need to learn, he will find material to teach and a way to teach it. No institution, be it a one-teacher, one-room school

or a university with thousands of faculty, can fulfill its mission if that teacher or those faculty are dull, unimaginative, or time servers.

The present state of higher education -- its loss of prestige as an institution, its inability to compete with assurance for public and private funds, its enrollments that now wane, its faculties in confusion, and its institution doors closing to the new, fresh intellects who would have easily found places as scholars, researchers, and teachers a decade ago -- may well, within a few quick years, cause the ablest and potentially the best prepared to turn to other professions and fields.

Whatever form planning in Connecticut takes within the next few years, and it can be assumed that it will take many, and whatever changes then are undertaken in those plans in the decade after that, those plans will be nothing if especially careful pains are not taken to make all educational training appointments attractive, and to develop selection mechanisms which will assure the appointment of men and women whose capacities to further the objectives of the units, in which they serve, are especially well demonstrated.

Moreover, each institution must include a liberal arts component designed for the needs the institution serves. Each must be as free as possible to develop the kind of liberal arts program best suited to its own unique identity. This is particularly true if institutions are to be able to encourage staff to develop and engage in innovative and desirable interdisciplinary programs. There must be time for intellectual retooling. Institutions must be supported

in their attempts to solve the problems of faculty logistics created by new programs.

In short, the wisest response to the needs of the liberal arts is a combination of support for more faculty time and for experimental programs, and support for institutional autonomy to help create a pool of cooperative talent on which the State can draw across institutional lines.

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III. Sub-Committee on Long-Range Planning

This sub-committee was formed because there was a felt need within Program Group IV to be sure that attention was focused on the impact of rapidly changing future social, economic, technological, and political conditions on the planning and development of Connecticut's post-secondary educational programs.

It is felt that the contributions of this sub-committee to the thrust and content of the findings and recommendations found in Section One and to the answers to the specific questions in Section Two provided for this focusing of attention. However, it must be understood that the time spent on this report has been of necessity quite limited, and that we have had to work primarily with the information, background, and experience which each of us happened to have had access to previously. Hence, this report cannot be considered thorough, exhaustive, or authoritative. It is rather suggestive of the type of study and planning which is needed on a continuing basis if Connecticut's institutions of post-secondary education are to be fully effective in meeting the challenges of the future.

In other sections of this report, considerable emphasis was placed on the particular reasons why it is increasingly important to study the future more rigorously in order to plan educational programs effectively. In this part, we will recap briefly some of the ways the future is being and can be studied, and then will illustrate the kind of impact that reasonable consensus future projections could and should have on the development of educational programs.

A. Review of Studies of the Future

Increasingly serious attention is being given within government, business, and other institutions in many parts of the world to formal, systematic and rigorous efforts to study of the future. Some of the usual products of these studies are trend projections, development of alternate scenarios, and identification of possible or likely specific problems and opportunities. The desired results and focus of futures studies are properly to help planners and policy makers to make better decisions today, and to help the interested constituencies to understand the future implications of today's planning decisions.

1. Several years ago, the Connecticut Research Commission directed the Institute for the Future (IFF), then located at Middletown, to make several futures studies. IFF Report R-8, Issues and Opportunities in the State of Connecticut: 1970-2000 by Selwyn Enzer and Raul de Brigard explored by the Delphi method a series of social, economic, political, and technological possibilities of interest to the State, including a section on education.

2. Another recent report of interest is the October 25, 1972 report of the Center for Integrative Studies, S.U.N.Y., Binghamton, A Continuation of the Typological Survey of Futures Research, U.S. by John and Magda McHale. This report probes the extent and type of professional futures study now being done in the United States and the methodologies being employed.

3. The Educational Policy Research Center, Syracuse University Research Corporation, issued in May 1969 a 100 page report entitled, Shaping the

Future of American Education: A Preliminary Annotated Bibliography of Educational and General Futures, by Michael Marien. This report illustrates the already large scale of serious futures material which is available for study.

4. A recent report by Mr. W. Simmons, a Connecticut based consultant on futures based planning, lists some of the United States institutions now concentrating on futures based policy studies.

5. The state of Hawaii has had in being, for several years, the Governor's Commission on the Year 2000, to focus attention on the likely problems and opportunities of the next thirty years in all areas of concern. A similar approach in Connecticut could help to develop a broad background against which superior education planning could be done.

6. In summary, rigorous study of the future has become a necessary prerequisite to serious educational planning. At the State level, this requires the full-time assignment of specially competent expertise, plus continuing access to the ongoing futures research work elsewhere in the country and throughout the State.

B. Assumptions about the Future and their Implications for Post-Secondary Educational Programs

Future Assumption 1 - Fast Change

Possible Demands on Education

a. Educate for relearning
b. Provide continuing education opportunity.
c. Study and teach the methods of future analysis.
d. New jobs will be created in future study as survival becomes critical. Coordination becomes more important.
e. Study and teach change management and adaption to change.

Possible Effects on Programs

a. Teach process and learning tools and concepts.
b. Specific Future Studies programs and courses.
c. Offer or require appropriate courses as a part of many career programs.
d. Teach systems theory and simulation.

Future Assumption 2 - Relatively less employment in goods production, more in services, government. (More per capita income available to be spent for services that are both necessities and luxuries.)

Possible Demands on Education

a. Study for revisions in student mix, five to ten years out.
b. More emphasis on health services (emerging biological technology).
c. Greater interest in GOOD HEALTH and exercise will create a need to train personnel in psychological factors of overweight and circulatory diseases.
d. Service Trades.
e. Government.
f. Policy and Security.
g. Law.
h. Harder to improve productivity. More management training for small and large business.

Possible Effects on Programs

a. Less emphasis on specific industrial professions.
b. Expand and shrink offerings more rapidly.
c. Teach small business management as well as trades.
d. More variation and emphasis on public administration.
e. More emphasis on understanding the psychology of the society as related to service-oriented businesses.
f. Teach creativity and productivity improvements in many career areas.

Future Assumption 3 - A "LEARNING" society. Time and money to pursue educational interests.

Possible Demands on Education - Development of programs that service the general population.

Possible Effects on Programs

a. Development of Liberal Arts and career-oriented programs for life and careers OF THE FUTURE. All colleges and especially all two-year colleges must poll industry, business, as well as the community to be attuned to these new career needs.

b. Development of enrichment as well as degree-oriented programs both for job-related skills and also for personal growth. Example: "Ecology for the Housewife," "Effective Parenthood," and "How to Work for Change in Government."

c. New techniques must be developed for effective teaching aimed at individual interest and learning pace.

d. Rather than continued cutback of government funding, this is the time to be funding full-time research and development of techniques and personnel.

e. New ways to train teachers must be developed. Good background in subject matter with in-service training by co-workers could be one effective way. The two-year technical colleges require industrial experience in the field. The ability to relate subject to reality is vital.

Future Assumption 4 - Characteristically more complex interdisciplinary work.

Possible Demands on Education

a. INTERDISCIPLINARY DYNAMIC SYSTEMS.
b. More continuous contact between education and action components.
c. Relationships of now unrelated fields such as Oceanography and Architecture, Technology and Ecology.

Possible Effects on Programs

a. Develop better ways to teach systems and interdisciplinary work.
b. Consider a restructuring of knowledge.
c. Majors in systems management.
d. Majors in several fields also will give job flexibility.

Future Assumption 5 - Proliferating technology

Possible Demands on Education

a. More and more complexity of technology.
b. Application of technology to solve problems of society.
c. New jobs may be created.

Possible Effects on Programs

a. Need for programs that meet the needs at all levels. Most training is being done at the top. It is necessary to define lower technical levels.
b. Application programs for ecology and other crisis fields. These programs must combine aspects of many fields.

Future Assumption 6 - Internationalization and more important emphasis on Pacific Basin area.

Possible Demands on Education

a. Need more and faster language training.
b. Geography; Cultural Anthropology; History, etc./Religion, etc.; Cross cultural communication; Area Studies.
c. Possibility of selling education to developing nations.

Future Assumption 7 - All present professions will be oversupplied by 1975.

Possible Demands on Education - Alternative professions must be identified and preparation for them must be made.

Possible Effects on Programs - New alternatives must be defined. Possibilities include:

a. Recreation and enrichment for old people and other neglected sectors of society.
b. Study of governmental problems such as welfare, medicare, education, and training in these careers.
c. Entertainment.
d. Travel and transit experts that might solve the future difficulty that a larger transit population will engender.

Future Assumption 8 - Emergence of WOMEN on the job market.

Possible Demands on Education

a. Redistribution of professional careers as there are more women doctors, engineers, lawyers, etc.
b. Need to compensate for the psychological effects on both men and women.
c. Need to redefine the role of women.
d. Programs must be available to women who do take time out to have families but who want to update careers. Larger numbers of women than ever before will be beginning and continuing education on both a full-time and part-time basis.

Possible Effects on Programs

a. As a defined goal, all schools from grade school to college must be involved in the changing role of women.

b. As the feminist movement is taken seriously and, hopefully, even understood, programs must be developed that study and define women as a moving force in society and also publicize the advantages for men where they are less pressured to take ALL of the responsibility.

c. The underlying atmosphere of educational programs will be that of developing an individual's potential, and in him or her an attitude of self-determination.

d. Programs (again a goal of the entire system) to change society's view of women that forces little girls to fit into molds and to ultimately limit themselves. An opportunity only exists if one sees it as an opportunity. Thus far, women and girls do not look beyond a certain point and will not risk being different. It is a shame that girls in any number are not yet taking advantage of the range of educational opportunities open to them.

Future Assumption 9 - Absorbing of MINORITY groups into society.

Possible Demands on Education - Need for both blacks, and whites, and other groups to study the problems and look for a solution.

Possible Effects on Programs

Total approach. At present, black students study courses on their history and whites study theirs; a solution to the problems must be found by the study together of the problems and possible solutions. Possibility career opportunities may be generated as government begins to deal with this problem.

Future Assumption 10 - Deterioration of the secondary school situation.

Possible Demands on Education

a. The role of the secondary school must be redefined.
b. Energies seem to be concentrated on four-year college bound students and many of the other students are somewhat neglected.
c. Many of the present college problems wouldn't exist if the secondary schools were able to deal differently with their problems.

Possible Effects on Programs

State-coordinated articulation between all levels is vital. Need to examine college remedial programs in operation in the State by having a central communicating group. Many are working independently in this field in this State and there is no procedure to share findings.

Future Assumption 11 - Trend toward disillusionment with college and learning in general. The modern student will not put in time for a degree if he doesn't consider the content relevant.

Possible Demands on Education

a. Lack of jobs has undermined the former value of education to provide a job.
b. Need for realistic programs that prepare for life, and for a job that will materialize.

Possible Effects on Programs

a. Learning must become a reward instead of a punishment. It must be enjoyable and fulfilling in the present and not only endured for some future reward.

b. Again a combined systems approach toward learning of all levels will change the trend.

Future Assumption 12 - All pervading importance of computers.

Possible Demands on Education - Need to teach simple computer operation and programming much more widely and in many more disciplines NOW.

Future Assumption 13 - Small world, urbanization, megalopolises, etc.
Erosion of middle class values and moral codes.
Erosion of "national interest."
Humanist and even self-indulgent criteria will become central.
Values are in flux--yet, we must have values to operate.

Possible Demands on Education

a. Better understanding of social problems and the interaction of people.
b. Need for training with coping with life and the new questions that will arise concerning life.
c. We can no longer depend on unconscious values.
d. We must study and teach values widely and in a practical way.

Possible Effects on Programs

a. Learning philosophies must be developed through the cooperation of all levels rather than the fragmentation that now exists between grade school, high, and college levels.
b. There must be a total approach that deals with the problems of living everyday life and relates it to the subject matter. Little attempt is presently being made to make learning relevant.

Future Assumption 14 - Rely more on parents for rearing new generation.

Possible Demands on Education - Consciously teach parenthood and child development broadly, not just to specialists.

SUMMARY - Because of the picture evoked by looking at future trends, the present need is for CREATIVITY AND INNOVATIVENESS.

Possible Demands on Education - We need a new kind of teaching and for all levels. Instead of maintaining the status quo, it is time to examine the traditional for effectiveness, but we must be willing to abandon the ineffective.

Possible Effects on Programs

a. Reward and recognize teacher creativity* modifying the present emphasis on college credits and long service.

b. Develop meaningful criteria to determine personnel and programs that will remain.

C. Particular Program Recommendations Based on Futures Considerations

1. Future Studies

There is a wide need for new courses in futures research and the methodology of futures-oriented planning and policy making. This approach is particularly vital in all career fields concerned with technology, the social sciences, and any kind of management and public administration. There is probably a need for degree program majors in futures studies at several institutions, and there should be at least one graduate program through the doctorate as soon as practical.

The literature and research resources are already available to support extensive and intensive study. This is a demanding and growth field, and one which will be increasingly recognized and needed by business, government, educational, and social service institutions.

2. Systems Studies and the Restructuring of Knowledge

One of the most important emerging new fields of knowledge is general systems theory. Though the Society for General Systems Research was founded in 1954, much of the work in this field has tended toward development of systems theory in single field biological and psycho-social sciences

* Creativity in education: continued search for techniques that structure a learning situation.

such as biology, ecology, psychology, neurology, and sociology. The growing understanding of cybernetics and the developing related practices of systems engineering, information systems, and systems management have helped lay the foundation for the growth of true interdisciplinary systems concepts and study.

What is needed now are more systems oriented courses in most career field areas in most of the four-year colleges and graduate schools. There is also room for interdisciplinary systems majors at the baccalaureate through the doctoral level.

3. Change Management and Adaptability to Change

There is need for additional courses and research in the behavioral management areas related to the management and acceptance of change.

All of us will be living in a society in which rapid change and the constructive management of change will be crucial to personal and group survival. We need to learn and teach much more extensively in this field, and the need is great in all career fields and disciplines.

In addition to adding new courses and areas of concentration, careful study should be made of all existing programs to be sure that they are being taught in a manner which reflects and prepares for an environment of rapid change.

4. New Emphasis on Management Studies

There has been a considerable tendency in the past to think of the study of management in terms of business administration, though there has been modest educational attention given to public administration and educational administration.

The projected future trends in our post-industrial society, including the increasing pace of change, the increasingly service-oriented nature of our economy, and the rapid growth of the public sector, all suggest that management training must be thought of far more universally. There is, or should be, an important management component to most career fields today. This trend should increase. Hence, it becomes more important that the principles and techniques of management be much more widely and explicitly taught.

5. Environmental Studies and Technological Assessment

Public policy appears to be moving quite rapidly towards more and more comprehensive attention to the total environment and demands for technological assessment, or the projection of possible side effects from new technologies.

These fields will give rise to many new career opportunities, from the technician to the doctoral level. However, the educations for such careers must be rigorous, technical, and unusually interdisciplinary.

6. New Emphasis on International Studies

Our world society is becoming far more immediately inter-related and inter-dependent as a result of exponentially improving transportation and communication technology. This is becoming increasingly obvious in all economic areas, but is also illustrated by the continuing world-wide deployment of our military forces and the more recent advent of social service activities like the Peace Corps.

The growing internationalization of business and education give rise to many new career opportunities and the need for considerably more widespread education in related fields.

The fields of particular interest are geography, history, cultural anthropology, and language, over and above the career education itself. Area studies minors to complement career vocational majors would be one approach.

The emerging economic supremacy of Japan will lead to far greater importance to Asia. Hence, special attention should be given to Asian language and cultural studies, including Japanese, Chinese, Korean, Thai, Malayan, Indonesian and Filipino. In Latin America, special attention should be paid to Brazil which shows signs of emerging as an economic powerhouse. The oil producing areas of the Middle East will also be increasingly important.

None of the foregoing is to suggest that Europe will be unimportant. Rather, it is to point out that our relatively exclusive concentration on Europe should change.

7. Learning and Teaching

In the knowledge age which we are entering, it will be increasingly important that all members of the society continue their education and training throughout their lives, by both formal and informal methods. In these circumstances, improved efficiency in learning and teaching would represent a considerable asset to the individual as well as greater efficiency to the society as a whole.

This suggests that most students of post-secondary education should take at least one course in the theory of learning and teaching, with particular emphasis on their career fields of interest. It should also be generally recognized that an important element of all programs and courses should be pointing out of the principles and techniques most helpful to learning and relearning in each field.

D. Sources of Inertia in the Change Process

One of the missions which our sub-committee accepted was "to consider the constraints in the educational system which tend to impede futures-oriented planning and adaptive action, and to make suggestions for reducing the inertia." The following thoughts emerged from our collective insights and discussions:

1. The circumstance which social systems like the system for the coordination of post-secondary educational programs must now newly face is that we must learn to adapt consciously to perceived future changes in the environment, because the nature of lead times and the pace of environmental change makes it increasingly unlikely that our society can survive if we can only react to the presently felt problems. By the time a serious problem hits us, it can be too late. The necessity to change our systems importantly to conform to our perception of a future environmental requirement is unnatural, and, hence, particularly difficult for us to adapt to. This is the basis of the much discussed book, Future Shock.

2. There is a growing body of literature on the general problem of the management of change or "renewal" within complex social organizations, and yet it is a common observation that it is not all that easy to identify and achieve worthwhile change in any society or social institution. In his book, Research Development and Technological Innovation, Professor J. B. Bright of Harvard identified the following reasons why the establishment may resist innovation:

a. To protect social status or prerogative.

b. To protect an existing way of life.

c. To prevent devaluation of capital invested in an existing facility or in a supporting facility or service.

d. To prevent a reduction of livelihood because the innovation would devalue the knowledge or skill presently required.

e. To prevent the elimination of a job or profession.

f. To avoid expenditures such as the cost of replacing existing equipment, and of renovating and modifying existing systems to accommodate or compete with the innovation.

g. Because the innovation opposes social customs, fashions, tastes, and the habits of everyday life.

h. Because the innovation conflicts with existing laws.

i. Because of the rigidity inherent in large or bureaucratic organizations.

j. Because of personality, habit, fear, equilibrium between individuals or institutions, status and similar social and psychological considerations.

k. Because of the tendency of organized groups to force conformity.

l. Because of the reluctance of an individual or group to disturb the equilibrium of society or the business atmosphere.

Most of us might agree that this list, with minimal word changes to reflect the special context of post-secondary education, applies to the problem of inertia within educational systems.

3. Can any suggestions be offered on reducing resistance to change within the system for the coordination of post-secondary educational programs? The following suggestions are offered as possible starting places for further study and consideration:

   a. There is a relatively strong tendency to see either the other parties to the process or the "system" itself as villians. This leads to polarizing rather than the mutual effort and cooperation which is required to effect worthwhile change. We need to work on the problems, not each other.

   b. Real, active leadership in the innovative process is required, particularly from the administrative heads of each college, governing boards, the State Commission for Higher Education, and the deans and department heads.

   c. A broad, far-reaching, widely participatory planning process can help identify and communicate the real need for change, and the change strategies selected.

   d. All parties to the process can undergo special conditioning and training in both the problems inherent in changing complex living systems and the techniques and sensitivities which can be most useful in managing change.

4. Change appears to be more acceptable:

   a. If understood.

   b. When it does not threaten security.

   c. When those affected have helped to create it.

d. When it results from the application of previously established impersonal principles.

e. When it follows a series of successful changes.

f. When it comes in digestible doses.

g. If it has been planned.

h. To people new on the job.

i. To people who share in the benefits.

j. If the organization has been trained to plan for improvement.

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Introduction

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